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# INDEX TO THE MODERN HOSPITAL

Volume VI, January to June, Inclusive, 1916

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# THE MODERN HOSPITAL

*A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services*

Vol. VI *January, 1916* No. 1


## THE EDUCATIONAL FUNCTION OF THE HOSPITAL[1]

### Care of the Sick Only One of the Duties of the Modern Institution; the Education of Physicians, Nurses, Employees, Patients and the Public Quite as Important—Nurse Training Should Be More Rigidly Standardized


By WINFORD SMITH, M. D., Superintendent of the Johns Hopkins Hospital, Baltimore


WRITING on the subject of education, Herbert Spencer said: "To prepare us for complete living is the function which education has to discharge." The old theory of education was that it was the acquisition of knowledge; the new theory, as promulgated by Spencer, is, that it is a training of the mental faculties, so that in addition to knowing about things, we are also taught how to accomplish things.

The first duty of the hospital is, of course, to provide for the care and treatment of its patients; but it also has a function beyond this, and that is educational. In the broadest sense, hospitals may be said to be educational to physicians, medical students, nurses, patients, employees and to the community. While the majority of hospitals are not so located as to be available for students of medicine, all hospitals to a certain extent are educational to the other classes mentioned.

In a very able address before the American Hospital Association in 1911, Mr. Abraham Flexner made the point that hospitals owed a duty to medical education, and unless they met that duty they failed to accomplish their greatest usefulness. He pointed out that many hospitals are so located as to be of great value to neighboring schools, in that it is possible for them to furnish to such schools the opportunity to study groups of patients with all of the possibilities of practical demonstrations and bedside instruction; and that in failing to meet the needs of such schools, they do not embrace the great opportunity of increasing their own usefulness, both in the exercise of their primary function of caring for the sick and in the exercise of their educational function. He also pointed out that many other hospitals which place their facilities at the disposal of poor, unworthy schools, are likewise failing to meet their responsibilities in that they are fostering these poor schools and therefore poor medical education.

It is unquestionably true that hospitals are becoming each year more and more important factors in the preservation of the public health. There is a constantly growing appreciation of what the hospital means to those who are ill, of its responsibilities for educational work and for investigation and research, which, while not interfering with the actual care of the patients (the result being quite the contrary), present possibilities of a greater service to mankind generally. The hospital which welcomes teaching within its walls insures more careful methods, more careful study of the individual case, and, generally speaking, better and more thorough treatment for its patients.

In this country we have been surprisingly slow to grasp this fact, considering that the growth of the hospital movement has been so rapid. It is quite probable that the rapidity of hospital development in America has been largely responsible for the lack of appreciation of the larger opportunities. It was only a few years ago that the hospital in this country was considered the place of last resort. Today almost a complete reversal of opinion has taken place, and it is now considered the place of first resort for anyone who is seriously

[1]Paper read before the National League of Nursing Education at San Francisco, June 26th, 1915.

ill. With this growing appreciation of the value of the hospital there has occurred a mushroom-like growth of hospitals, attended with all the evils of too rapid development—namely, lack of standards of organization and management, lack of standards as to support, poorly formulated plans, mismanagement and failure to comprehend the greater possibilities of the movement.

Within the last few years, however, there has come a broader conception of what the hospital stands for and of its greater usefulness. This is largely true because of the educational function of the hospital.

I have said that the hospital is educational to practically all who live and work within its walls, and to the community as well. Who can doubt that the employees working day after day in such an atmosphere must learn something of value in the way of helpfulness to others, something finer and broader by way of appreciation of life's problems, of human frailties, and of self-sacrificing service to others? Who can doubt that the patients, many of them at least, learn these same lessons, and at the same time learn how to take better care of their own bodies and how not to be a source of danger to others? These are phases of the educational function not often considered, but nevertheless important.

Of the more important phases, let us consider the education of medical students. In the so-called teaching hospitals, thousands of medical students are trained each year, both in theory and in practice. They are enabled to interview patients and thereby learn how to elicit the necessary information. They are taught what facts to emphasize and what to ignore, what to retain and what to discard. They learn how to examine a patient in order to bring out the abnormal conditions. They learn from the teacher and by actual experience how to recognize a condition and how to reason from the phenomena presented, back to the conditions underlying them. Furthermore, having learned at the bedside to recognize abnormal conditions, they learn also what is the proper therapeutic measure, and how to carry it out, which is quite as important. They are taught not only about a thing, but how to perceive the thing itself. The hospital, then, is the training school for thousands of young men, who go forth each year to give to their fellow man the benefit of that knowledge.

Again, every hospital has its resident staff, numbering all the way from one to a hundred. These young men, already recognized as physicians, continue for one or more years to serve the hospital in order to acquire additional skill in diagnosis, in treatment, in operative technic and in powers of observation and reasoning. Then, too, there is the senior staff of physicians and surgeons, who, by the study of large groups of patients, by the experience gained in operating upon large numbers of patients, acquire a skill and technic which make them authorities in their subjects and leaders in their profession.

In the laboratories, also, are those men who devote their lives to careful routine study of all conditions found, to constant experimental work, as the result of which new facts are being discovered which add to the knowledge of disease and the methods of combating it. All of this means progress and benefit to mankind.

To the community in which such an institution is located it has an enormous educational value. The effect which the standards and principles of such an institution have on a community, the development of public interest in these principles, the efforts of this group of thoughtful, earnest, skilful workers cannot fail to have a very practical value in the development of public hygiene, better sanitation, better living conditions, and a higher plane of existence.

I am aware that I am telling you nothing new, that, in fact, I am only repeating in a little different form what has been said over and over again. Nevertheless, it seems to me that it bears repetition, for the true value of the hospital, in the broadest sense, is not yet generally recognized.

There remains one, a most important, phase of the educational function of the hospital—I might say the most important phase—namely, the education of the nurse. I wish to dwell at some length on this subject, because of the need of a more accurate perception of its possibilities. The training school for nurses represents one of the most important departments of the hospital, both because of its function in nursing the patients and because of the public demand for trained nurses.

It is an interesting fact that those who organized some of the early schools had a much better conception of the need of nurse training schools, as educational institutions, than those who are responsible for the majority of the schools of the present day. For example, in the report of the Training School Committee of the Bellevue School, which was one of the earliest schools established in this country (probably the second), we read the following inspiring and far-sighted statement of their aims:

"In course of time we propose to benefit not only Bellevue, but all the public hospitals, and also to train nurses for the sick in private houses and for work among the poor.

"As the work advances, we hope to establish a college for the training of nurses which will receive a charter from the state and become a recognized institution in the

country. Branches of this college would be established in connection with hospitals devoted to particular diseases, such as the Woman's Hospital, etc., so that in course of time nurses trained for the treatment of special diseases will be as easily obtainable as physicians. Connected with the college would be a home for nurses, whence they would be supplied with employment and provision made for them when ill or disabled by labor or advancing years. The nurses when trained would receive a diploma or certificate, renewable at fixed periods. Thus the college would control their nurses during their state of pupilage and protect the public from imposition by making it known that a nurse whose diploma or certificate was not in due form had forfeited the confidence of the institution.

"The work before us is not an inexpensive one. It should not be regarded merely in the light of a work of benevolence, but as a system of education, calculated to benefit thousands in all ranks of life, and, like the quality of mercy, blessing him that gives and him that takes."

Not many training schools for nurses have been started with such a broad conception of the needs, the aims or the value of such a school, as an educational institution. I have said that the growth of the hospital movement has been remarkable. The growth of the nurse training school movement has been equally rapid, for the two have developed together. To this fact we must attribute many of the difficulties which now attend every effort to standardize these schools and to raise the standard of nursing.

To be more explicit, practically every hospital of any size has its training school for nurses. In the majority of these instances the hospital has established the school, not with any deep-rooted desire to train nurses for the purpose of serving the public generally, or because of any particular interest in education along this or any other line, but with one idea paramount—to get the nursing work of the hospital done in the simplest and cheapest possible manner. Even a superficial study of the situation will convince one that this is not an exaggeration, and that the majority of boards of trustees, medical boards or ladies' committees, have no conception of the great part which the nurse is playing today in all humanitarian work, nor of the increased demand for educated, thoroughly trained nurses for all phases of public health work. They think of her only as the pupil and as the private nurse.

Many of these schools, I am almost tempted to say the majority, have standards of admission too low or too elastic, have courses of instruction too meager and too spasmodic, and subordinate too completely the interests of the school, as a school, to the practical needs of the hospital. This does not accord with my idea of the educational function of the hospital. The point has been made by Mr. Flexner that hospitals owe a duty to medical education, and we heartily agree with him. I would also make the point that hospitals owe a duty to nursing education, and that this is particularly a function of the hospital.

That the trained physician and surgeon play a very important part in the general scheme of life none will deny. Does anyone believe that the physician and surgeon could begin to do the splendid work which they are doing today without the trained nurse? Without detracting one whit from the credit due the physician and surgeon, we must admit that medical and surgical technic would hardly be what it is today had it not been for the development of the trained nurse to supplement his work and to assist him in carrying out the complicated and technical procedures of modern practice. That good nursing is often quite as essential as good medical attention, and that it is often equally responsible for a favorable result, none will deny. Furthermore, the better trained a pupil is the better nurse she will be. A nurse cannot be overtrained any more than a physician can be overtrained.

If the hospital owes a duty to medical education, it also owes a duty to nursing education, for the same reason applies, namely, the need of such education in the interest of humanity. Only a few hospitals are available for teaching medical students, while many hospitals can educate nurses, and every hospital large enough to support properly, and which properly conducts, a training school, renders a great public service by so doing.

The trained nurse is now called upon to perform work which was never contemplated in the beginning. Even the broadest conception did not in the early days conceive of a service much wider than that of skilled attendance upon the sick. In the present day, however, she is a therapeutic agent of great value. She is called upon in almost every phase of our civic and social life to organize, to systematize and to teach, as the private nurse, the visiting nurse, the school nurse, the health department nurse, the rural nurse, sanitary inspector, etc.

Professor C. E. A. Winslow, of the College of the City of New York, writing on the education of the public health nurse, says:

"We need expert sanitary engineers to build and operate our public works; we need sanitary physicians to deal with the broader communal aspects of the spread of communicable disease; we need sanitary bacteriologists and chemists and statisticians to furnish the special expert knowledge by which all these activities must be guided. More than all, however, we need large bodies of sanitary educators to bring our knowledge to bear on the individual citizen who alone can make so much of it effective. Some of these missionaries of sanitation will be physicians, but most of them will be nurses. And that is why, in my judgment, the visiting nurse is the most important figure in the modern movement for the protection of the public health."

Dr. J. H. Mason Knox, late president of the American Association for the Study and Prevention of Infant Mortality, writes as follows:

"In the last analysis, however, all our work hinges upon the better care of individual babies coming under our influence, and it is here that the trained nurse should be given first place, both because of her unique opportunities and because of the good results which she has accomplished and does accomplish."

Testimony of this character can be quoted *ad infinitum.*

Recognizing, then, the desirability and the necessity of training nurses, we may ask, is this the function of the hospital? I believe it is distinctly and peculiarly the function of the hospital. I have never been able to believe in the idea of a detached central school, where the pupils will receive their preparatory and theoretical training, and from which they may be sent out to hospitals on assignment, to receive their final and practical training. Such a plan can undoubtedly be made to work, but in my opinion is not ideal. Experience in medical education should teach us that. The medical school which gives the first two years in one place and the last two in another is not as desirable as the one (all other things being equal) which enables the student to spend all four years in the same environment. It is not as good for the student and is not as healthful for the development of the school itself. The same principle applies to the training school for nurses.

The training school for nurses, as well as the medical school, must have the facilities for practical training and actual experience in order that the education may be well rounded and complete. Hospitals exist to serve the public. In the broadest sense, then, the hospital should develop along all lines which tend to public service, which are related to public health, and which do not interfere with its primary purpose. In no other way can it attain its fullest efficiency. There are many hospitals, as we all know, which are now exercising this function. In fact, to a greater or lesser extent, they all do. There is, however, a need of standards, else there is danger that the profession of nursing will become filled with quacks; that the public will be led to accept poor service when the best is needed; that worthy young women will be misled into believing that they are to receive a thorough training, when they are offered only an imitation and superficial training, for which they must give from one to three years of hard, faithful, honest service; danger that the vast possibilities for public service by a profession of skilled workers may be lost because of the failure to foster the growth of this profession and to protect it from commercialism and low standards.

What are the standards needed? In the first place, it should be recognized that this movement which started out simply to meet a hospital need has developed into an educational movement, in response to a vastly more important and vastly broader need of the public at large. In order to safeguard this movement, therefore, each state should standardize its training schools for nurses, and registration should be compulsory, as with the physician.

In order that their graduates may be eligible for registration, schools should be obliged to adopt a fairly uniform curriculum, and to give training in all necessary subjects, or else affiliate with other recognized schools capable of supplying training in the subjects in which the weaker school is deficient. Only those hospitals which have more than a minimum number of beds and which are so-called general hospitals should be recognized as capable of conducting training schools.

Compulsory registration is likewise important; in my opinion, quite as important as for physicians. These are fundamentals and can be met by legislation. In order to insure the educational machinery, endowments for schools are extremely desirable; or at least a certain definite budget should be set aside for strictly school purposes.

Many arguments are heard against such measures, as, for instance, the difficulty of getting a sufficient number of nurses to carry on the work of the hospital, and the need of cheaper nursing service for people of moderate means. With regard to the first, it has not yet been demonstrated that raising the standard of the profession would not attract more applicants to the schools. If such did not prove to be the case, then the training of nurse assistants, or attendants, would undoubtedly meet the situation.

As for the second argument—the need of cheaper service—the same can be said of physicians, yet we are constantly raising the requirements of medical schools and are now considering the desirability of a fifth or hospital intern year, before allowing the physician to practice. We would not think of recommending half-trained physicians. Then why consider half-trained nurses?

In closing, I wish to repeat that in my opinion it is high time that the medical profession and the public should recognize the importance of high standards in the education of the nurse, and should demand compulsory registration for the nurse, as well as for the physician, the pharmacist, the dentist, the osteopath, and the barber. The hospital should play an important part in all of these movements.

Fig. 1. General view of entire sewage plant, State Hospital, Warren, Pa. Retaining walls of filter built of concrete blocks, laid so that air is admitted to body of filter through open spaces.

## TREATMENT OF HOSPITAL SEWAGE IN AN INDIVIDUAL PLANT

### Septic Tank Treatment Has Given Way to the Imhoff System—A Different Principle Involved—The Plant at the Warren (Pa.) State Hospital

By P. E. MEBUS, C. E., Designing Engineer for Albright & Mebus, Philadelphia.

IN recent years, the legislatures of a number of states have made laws and regulations for preserving the purity of the natural water courses. In 1905, the Pennsylvania legislature enacted such a law, creating the state department of health and making it mandatory for all matters pertaining to sewerage and sewage treatment to be referred to the commissioner of health for approval. Municipalities at once pointed out that the state itself, through its large institutions, was one of the worst offenders in the matter of stream pollution. At subsequent sessions of the legislature, steps were taken to instal sewage treatment plants at all state institutions, thereby setting an example both for municipalities and individuals. The high standards of purity for effluents, which have been established by the department, have resulted in developing the type of plant described herein.

The treatment of hospital and sanatorium sewage is hence an important matter to the administrative authorities, as such sewage will usually contain a relatively higher percentage of pathogenic organisms than ordinary municipal sewage. To secure satisfactory results, each situation should be placed in the hands of sanitarians who are experts in such matters. Their duties should be to study carefully the conditions; to design and superintend the construction of the treatment plant, and to supervise its operation; and it is only by a combination of these three duties that success will be attained. To a hospital or a sanatorium, the successful purification of its sewage should be as much of an asset as the good quality of its water supply.

Sewage treatment consists essentially of three fundamental processes, viz.: removal of solids, oxidization, and sterilization. The first is accomplished by screening and by sedimentation, both methods being usually found in modern plants. The function of screens is to remove only the larger and non-putrescible matter, such as rags, brushes, etc., and allow the fecal matter and all other putrescible matter to pass into the sedimentation tanks, where it will settle out and, if retained for a sufficiently long period, be decomposed. The remaining liquid, containing organic matter, both in suspension in a comminuted state and in solution, must next be mineralized, so that

Fig. 2. View of percolating filter during construction.

Fig. 3. Percolating filter in operation. Pig pens adjacent to filter. Hospital buildings in background.

it may be non-putrescible. These processes, however, do not remove all of the bacteria, so that the third process, sterilization, is necessary to remove these residual and more resistant organisms.

The state hospital for the insane of the northwestern district of Pennsylvania, is located in Warren County, about three miles north of the Borough of Warren. About 1,500 inmates, together with 300 employees, constitute the entire population. The daily quantity of sewage amounts to about 270,000 gallons, or 150 gallons per capita. This sewage is collected by a system of 8-inch vitrified pipe sewers and carried to a pumping station, from which it is pumped to the treatment plant. All storm water and surface drainage is cared for by a separate sewer system. While making the studies for determining the best methods for treating the sewage it was found that there were only two sites available for building a plant; one, on an island in the Connewango Creek, and the other, on higher ground, about one-quarter of a mile to the west of the main wards. The former, although permitting of a gravity flow plant, had the disadvantage of being located only about 100 feet from the main highway, and of being flooded at high water, with all the consequent damage. The other site, necessarily chosen, was well adapted to the purpose, but required pumping the sewage.

*Pump House.* The pump house is built of reinforced concrete and brick, and conforms architecturally to the buildings of the hospital group. The house contains vertical type centrifugal pumps, driven by electric motors, the starting and stopping of which are automatically controlled by float switches, actuated by the rise and fall of the sewage in the collecting well located under the floor; i. e., when the surface of the sewage in the well reaches certain predetermined levels, the pumps are automatically started or stopped, as the case may be. With this arrangement, the greatest economy results, as only occasional attention is necessary for oiling and inspection. In order to avoid pump clogging, the sewage is passed through a screen chamber adjacent to the house, containing inclined bar screens with ¾-inch clear openings.

Fig. 4. Percolating filter operating in January, 1915. Temperature at 7:30 a. m. was 24° below zero. Photograph was taken in afternoon.

*Sedimentation Tanks.* Until recently, the accepted method of clarifying sewage was by means of the so-called "septic tanks," consisting merely of a plain concrete basin, whose size was sufficient to hold about one-half day's sewage flow. In these tanks the solids settled, were deposited on the bottom and

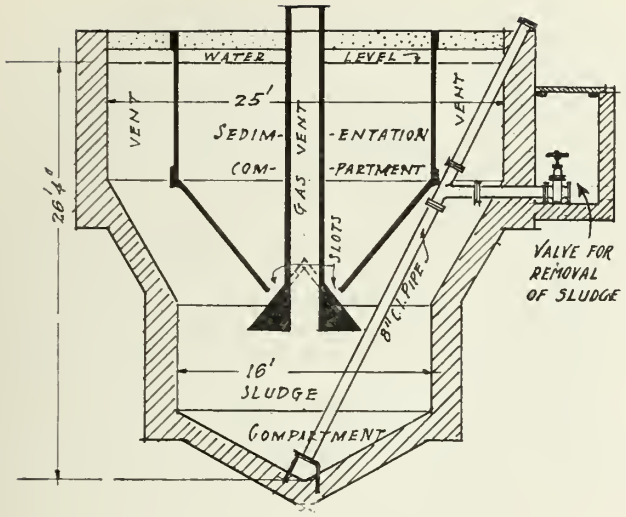



Fig. 5. Imhoff tank. Sectional elevation.

left to decompose. The gases arising from the decomposition carried large quantities of the already deposited solids up through the incoming sewage. Furthermore, much of the gas was hydrogen-sulphide, and was absorbed by the supernatant liquid, which in turn became septic. When this liquid was applied to the filters, especially in the form of spray, the odors were very annoying. The newer theories and their results present a strong contrast to the older methods.

The sedimentation tanks are now built, having two compartments, one above the other; the upper one—made about one-fifth as large as formerly—being utilized for sedimentation, and the lower one for the decomposition of the deposited solids. The bottoms of the upper compartment are inclined sufficiently to permit the solids sliding down their surfaces and passing through a slot into the lower compartment. The slot or opening is furthermore trapped so that the rising gases and solids pass into vent chambers, and do not permeate the fresh, incoming sewage. This type of tank is known as the Imhoff tank, being invented and perfected by a German engineer, Dr. Karl Imhoff. It has been used rather extensively and successfully, both in Germany and in America. This tank has many advantages, among them being the maintaining of the sewage in a fresh or non-septic condition, thereby facilitating its further treatment, and the production of a better sludge, —the technical name for the deposited solids. The tanks being necessarily deeper than the "septic tanks," subject the sludge to greater prssure, so that much of the gas produced is retained in the sludge, which makes it light and porous and at the same time reduces its water content, and consequently its bulk—thus facilitating its drying and ultimate disposal. In explanation it may be stated that septic tank sludge has an average water content of 92 percent, while Imhoff tank sludge contains at the most 80 percent water, corresponding to a 60 percent reduction in bulk. Also in a properly designed Imhoff tank, correctly operated, 98 percent of the gases produced consists of inodorous gases, viz.: methane, carbon-dioxide and hydrogen.

A reinforced concrete tank of this type has been constructed in connection with the Warren Hospital plant. It is shown in Figs. 5 and 6.

*Syphon Chamber.* The effluent from the Imhoff tank, practically freed from solids, flows to the syphon chamber, from which it is automatically discharged into cast iron distributing pipes, supplying 72 regularly spaced nozzles, which spray it over the surface of the filtering medium.

*Percolating Filter.* The filtering medium consists of crushed limestone, 2-inch to 3½-inch sizes, and rests on a cement floor, covered with semicircular cement underdrains. These stones are covered with a jelly-like layer of nitrifying bacteria which oxidize the organic matter in the liquid while it is passing over them, so that the effluent is rendered a non-putrescent liquid, with a greatly decreased bacterial content, indicated by the appended table.

*Chemical House.* To best effect the removal of the more resistant residual organisms, among them being the B. Coli. types, it is necessary to add a germicide to the liquid, the most common being an aqueous solution of hypochlorite of lime containing available chlorine. Its best recommendations are, the rapidity of its action—the author's experiments at the Philadelphia

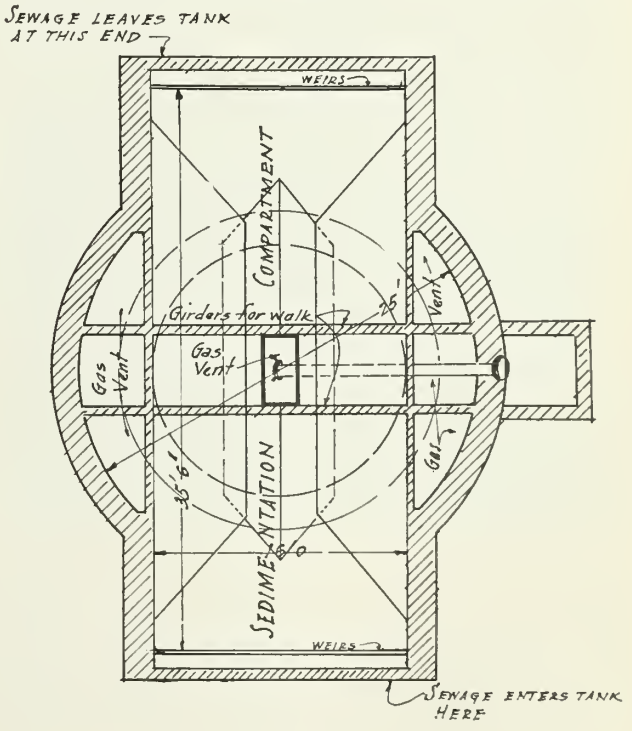



Fig. 6. Imhoff tank. Plan.

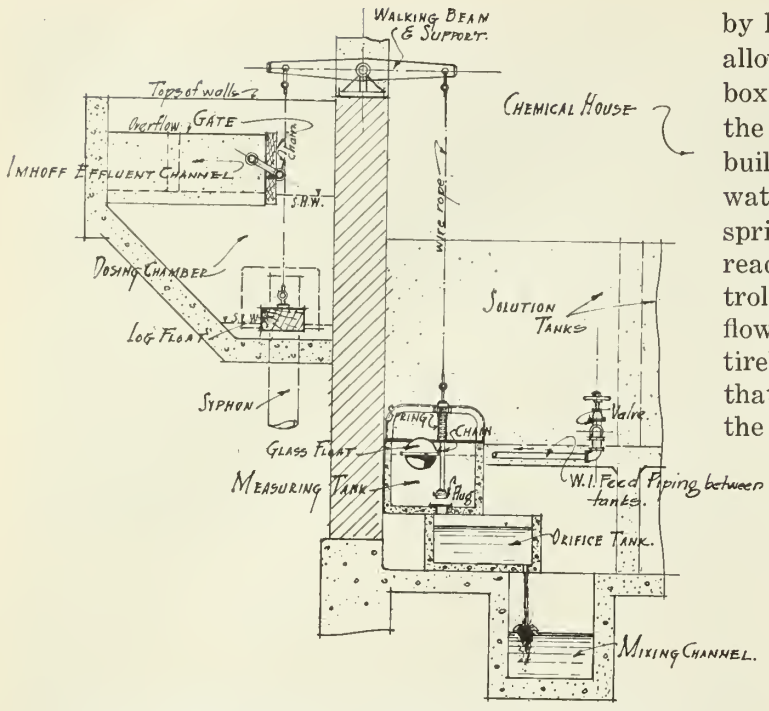



Fig. 7. Diagrammatic section, illustrating operation of automatic hypo feed apparatus. (Dosing and measuring tanks empty orifice tank, feeding solution to effluent.)

Testing Station showing very efficient disinfection in 10 minutes—and its low cost, being about 2c a pound. Chlorine gas, requiring a special apparatus for adding it to the sewage, has recently been placed on the market, and has already been very successfully used at several places. The results obtained are identical with those obtained with the former method, and its cleanliness and facility of handling are strong points in its favor.

At the Warren plant, the first mentioned method is in use, together with a unique device to proportion the chlorine to the sewage flow. This device is shown diagrammatically in Fig. 7. Its operation is as follows: The log float in the syphon chamber falls with the water-level, thereby lifting the plug of the measuring tank and allowing the contents to flow into the orifice box, from which it is slowly discharged into the filter effluent as it passes through the building. The log float again rises with the water-level, the plug is forced to its seat by a spring, and the measuring tank is again filled ready for the next cycle. A float valve controlled by a glass float prevents this tank overflowing. Should the flow of sewage cease entirely, no chlorine solution would be added, so that besides adding the solution in a ratio to the sewage flow, it is also economical in that no solution is allowed to flow to waste. About two parts per million of available chlorine are added to the filter affluent to secure efficient disinfection. All the apparatus and tanks are housed in a small building 14 feet square.

*Secondary Sedimentation Tank.* A secondary sedimentation tank has been installed, to insure a thorough mixing of the chlorine and sewage and to permit some additional solids to settle out. The effluent of this tank, now a non-putrescent liquor and practically free of bacteria, flows to the aforementioned Connewango Creek, which, from a sanitary viewpoint, is not in nearly as good condition as the effluent. (See table.)

*Costs, Personnel, etc.* The cost of the plant, together with about 1¾ miles of vitrified pipe sewers, was $37,856. The operation of the plant has been very satisfactory and has fully met the rigid requirements of the state department of health. No odors are noticeable either at the pump house or the treatment plant. The consulting engineers were Albright & Mebus, of Philadelphia, Pa.

Reports of Bacteriological Analyses
Warren State Hospital, 1915

| Date | Crude Sewage | | Settled Sewage Bacteria | | Perc. Filt. Effluent | | Final Effluent | | *Creek Water | | Percentage removal by perc. filter, based on settled sewage | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bacteria c. c. | B. Coli. | Bact. c. c. | B. Coli. | Bact. c. c. | B. Coli. | Bact. c. c. | B. Coli. | Bact. c. c. | B. Coli. | Bact. | B. Coli. |
| January 7 | 1,458,000 | 162,000 | 594,000 | 144,000 | 78,000 | 6,400 | 72 | 0 | 840 | 8 | 87 | 95 |
| January 14 | 1,134,000 | 147,000 | 567,000 | 133,000 | 96,000 | 8,640 | 38 | 0 | 248 | 33 | 83 | 93 |
| January 21 | 594,000 | 78,000 | 918,000 | 120,000 | 270,000 | 48,000 | 9 | 0 | 208 | 42 | 75 | 60 |
| January 28 | 756,000 | 90,000 | 594,000 | 216,000 | 108,000 | 1,980 | 48 | 0 | 600 | 96 | 82 | 99 |
| February 4 | 594,000 | 216,000 | 324,000 | 4,800 | 66,000 | 1,200 | 48 | 0 | 660 | 12 | 79 | 75 |
| February 18 | 600,000 | 300,000 | 310,000 | 8,200 | 64,000 | 1,100 | 28 | 0 | — | — | 79 | 87 |
| March 2 | 1,008,000 | 378,000 | 756,000 | 126,000 | 54,000 | — | 72 | 0 | — | — | 92 | — |
| March 8 | 1,188,000 | 151,200 | 702,000 | 252,000 | 13,500 | 2,520 | 15,520 | 120 | — | — | 98 | 99 |
| March 15 | 810,000 | 198,000 | 594,000 | 94,500 | 54,000 (a) | 2,340 (a) | 4 | 0 | — | — | 91 | 97 |
| March 22 | — | — | 540,000 | 48,000 | 1,674,000 | 52,000 | 48 | 0 | — | — | — | — |
| March 29 | 378,000 | 35,000 | 308,000 | 18,000 | 30,400 | 6,400 | 9 | 0 | 23,670 | 1,428 | 90 | 65 |
| April 6 | 4,685,000 | 3,725,000 | 162,000 | 67,500 | 42,000 | 2,700 | 120 | 0 | — | — | 74 | 96 |
| April 12 | 567,000 | 24,500 | 864,000 | 30,000 | 60,000 | 4,000 | 64 | 0 | — | — | 93 | 87 |
| April 19 | 1,008,000 | 105,000 | 756,000 | 84,000 | 36,000 | 4,860 | 72 | 0 | 360 | 39 | 95 | 94 |
| April 26 | 252,000 | 3,000 | 396,000 | 144,000 | 114,000 | 1,200 | 152 | 0 | — | — | 71 | 99+ |
| May 3 | 1,296,000 | 270,000 | 810,000 | 252,000 | 72,000 | 5,600 | 240 | 0 | — | — | 91 | 98 |
| May 10 | 378,000 | 105,000 | 252,000 | 66,000 | 66,000 | 5,940 | 420 | 1 | — | — | 74 | 91 |
| May 17 | 1,674,000 | 432,000 | 702,000 | 66,000 | 126,000 | 2,160 | 9,660 | 3 | 3,420 | 1 | 82 | 96 |
| May 24 | 810,000 | 162,000 | 2,484,000 | 186,000 | 48,000 | 1,200 | 88 | 0 | — | — | 97 | 99 |

*Above sewage plant outfall.

(a) Probable contamination of sample.

## MOTOR BUS TRANSPORTATION OF THE SICK TO THE COUNTRY

### Burke Foundation Relates Experience During the Past Summer That Must Have Great Bearing on Country Branch Hospitals—Occasional Relapses and Complications Due to the Ride—Some Details of the Experiment

By DR. FREDERIC BRUSH, Superintendent

THE Burke Foundation has transported 2,000 patients to and from New York City by means of a single motor bus during the past six months. A few overflow patients have used the railroad.

The problem was somewhat new. Professors in the physical department of a great university said that not more than seven adults per car could

Fig. 1. Motor bus of the Burke Foundation, used to transport patients to and from the White Plains Convalescent Hospital.

be carried successfully *on pneumatic tires* under our conditions of steady service, distance, roads, etc. The makers of cars set the maximum at twelve to fourteen. We had a bus built by the International Motor Co. to seat sixteen to eighteen besides the driver, and to carry a packed suitcase for each. (Even greater capacity will be tried for next time.)

Success was due to the fact that we departed from the idea of using a pleasure-car chassis, and built a special body upon a standard commercial truck 1½-ton chassis, with some modification of springs, etc. The car has single front tires and dual rears (standard pneumatic); the body is nearly seven feet wide inside (leg room), and the construction is that of a Pullman car, with baggage racks overhead, etc.

It was important to get (and this was attended with some difficulty) high and very sloping-backed, deeply upholstered seats, which should set low, pitch backward and be wide enough to take a reclining patient in case of need. Two or three folding stools give seats to other patients in the aisle when someone has to lie down. Extra loose cushions help to comfort. Very rarely has a patient needed to recline.

The view is unobstructed even in front, and the driver has full control of passengers. No nurse is sent; an intelligent patient is made "captain," and with the driver attends to the "little things that help," on the way. Patients generally consider the ride the most pleasant part of the convalescence.

The car makes four round trips per week; the distance of the round trip is fifty-four miles; the total distance covered to date is 6,500 miles; four miles to a gallon of gas, two blow-outs and eight punctures; the cost of the round trip is 63 cents per patient (including all except depreciation), which is just equal to electric road rates and half regular steam road rates here.

This car is being put to other uses, such as carrying large groups of visitors, entertainers,

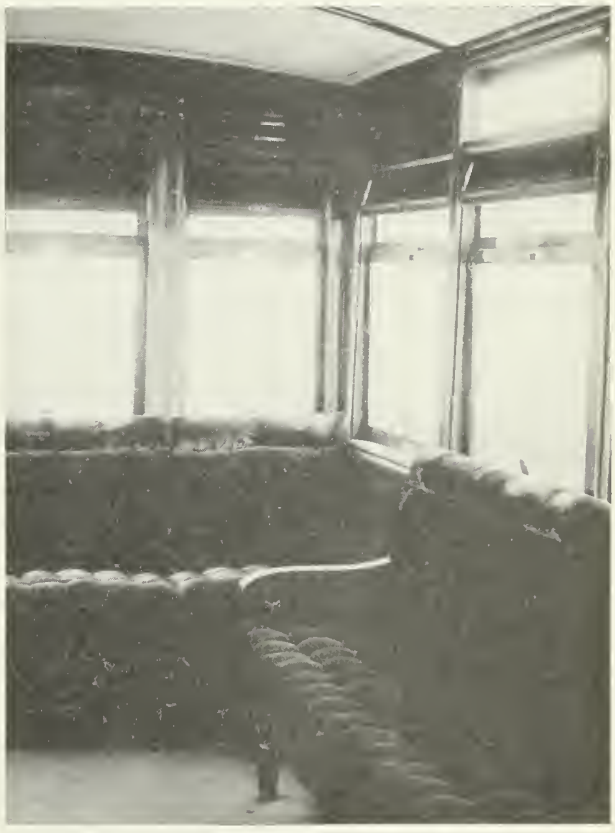


Fig. 2. The interior of the motor bus used by the Burke Foundation. Emergency door in rear; entrance front.

athletic teams, and patients for short pleasure rides. We are now building a twelve-passenger, smaller bus, for special ambulance service and auxiliary uses, as in difficult storm and road conditions, and for carrying very sick patients to hos-

pitals, etc. Its side seats will adjust for three reclining persons, and room for nurse.

Yet we are learning that such transportation has its dangers and limitations. The trip one way is now made in about 1½ hours, but patients tire rapidly toward the end; it would be better if the distance were under twenty-five miles. Three patients have apparently been made very seriously ill by the ride, and probably one hundred others (surgical mainly) have complained of added soreness, pain, etc., which could fairly be laid to this cause; nephrectomy, tuberculous kidney, pyelitis, recent gastro-enterostomy, arthritis, the recent larger abdominal operations, and certain other like conditions make up this list, and we are learning to send some tender patients by train, in rare instances.

This experience, though limited as yet, has an important bearing upon the recurring question of the feasibility of the country branch hospital. Certainly the impression is growing upon us that the transportation of sick and of very recently operated persons, in numbers, to considerable distances, should be entered upon with most careful experiment and supervision. As one example, the experience of convalescent homes of this vicinity (now largely augmented by our own) is that those suffering from rheumatic fever and heart disease relapse (soon after arrival) in the convalescent institutions much more frequently than when these patients are kept longer in hospitals, or in their homes. This is, of course, serious. Various causes have been sought for this occasional unfortunate outcome, but it seems to come back mainly to the mere *change*. Other conditions of illness are likewise unfavorably affected by the radical change of environment.

It is proving that patients may sometimes be sent too soon to the standard convalescent home. And the branch hospital will require much more the new standards of selection of patients, and of transportation.

## DANGERS OF THE CONTINUOUS BATH

### Patience and Tact and the Constant Presence of the Nurse Make Restraint Unnecessary —Method of Procedure at the Government Hospital for the Insane

By WILLIAM A. WHITE, M. D., Superintendent of the Government Hospital for the Insane, Washington, D. C.

I AM prompted to write these few words of warning by having recently noted that in a sister institution a patient was scalded to death in the continuous bath. It is not altogether clear from the account that I saw of this accident what happened, but I suspect very strongly that the patient was fastened in the tub and during the few minutes' absence of the nurse to attend to pressing duties elsewhere the water suddenly raised in temperature and the patient was unable to escape.

This brought home to me in a most emphatic manner the error of what I believe to be an entirely wrong practice which has grown up in connection with the continuous bath. In my visits to the various institutions I have noted, I might almost say a universal practice, of fastening the disturbed patient in the tub. There are various devices for doing this; the most common one is the canvas sheet, which is fastened over the top of the tub usually by straps which go under the bottom of the tub and are therefore inaccessible to the patient.

Another method which I have seen is by the combination of canvas sheet and camisole, the sheet being fastened over the tub and the camisole receiving the arms of the patient. Any of these devices makes such an accident as I have above mentioned a possibility.

Devices for securing even temperatures of water may get out of order and cause the water suddenly to heat, and if this should happen while the nurse is absent from the room, as sometimes she may be from force of circumstances, even though instructed to the contrary, an accident may happen. I think the only adequate precaution to take against this type of accident is to insist that under no circumstances is a patient to be fastened in the continuous bath.

The practice of fastening patients in the tub has grown up perfectly naturally. Disturbed patients make a great fuss on first getting into the bath, splash the water about, pull the plug, and in general make that sort of disturbance which suggests the necessity of restraint. We have been using the continuous bath at the Government Hospital, however, for a number of years, and we have never used restraint, and do not permit it under any circumstances; and still we bathe all of the various classes of patients that are received in any hospital—the acutely disturbed, confused and delirious patients that require this sort of treatment. I am therefore convinced that restraint under these circumstances, aside from being dangerous, is unnecessary.

If, however, restraint is not resorted to, considerable patience and some tact is needed to handle

disturbed patients when the continuous bath is first used. In other words, if we would do away with a crude and useless device, which is nothing but a makeshift and an excuse for a lack of exertion, something has to be done, some patience and intelligent effort has to be exercised. This is the price that has to be paid if we are going to deal with the matter more efficiently.

When the patient is first taken to the continuous bath and is very much disturbed it is often necessary to have two or three nurses to help get him in the tub. Sometimes he will not stay there. Under these circumstances it is not well to insist too strenuously, as the patient does not always understand what is expected. Make the effort for perhaps 20 minutes and then drop the matter and try it again later on the same day, or perhaps not until the next day. As soon as the patient realizes that he is not going to be injured or drowned and that nothing terrible is going to happen to him he will usually take to the bath kindly, and when he once experiences the soothing effect of the warm water he is generally pretty glad to remain in it. This may take three or four days of what one might call educational training, but this is worth while, not only to avoid the sort of accident that prompted this article, but because it is better for the patient to treat him reasonably than it is to overpower him and tie him up in a situation which he does not understand, which often terrifies him, and therefore ruins the whole effect of the therapeutic measure.

Neither should so much stress be laid upon patients not getting out of the tub. A disturbed patient, if left to himself, will often get out of the tub and run about the room in a typical maniacal fashion, but before he has been out of the tub but a few moments he becomes chilled and uncomfortable, and as a rule is glad to get back in the water. In the great majority of cases he will go back of his own accord in a few minutes if left alone, and he should always be allowed to do this rather than forced to go back, with the consequent conflict between the patient and the nurse.

In hospitals where there are male physicians in charge, and even otherwise, depending upon the case, it is well that women patients especially should be partly clothed, either in a light undershirt, or chemise coming down to the knees, or a nightgown. This can be supplemented, if desirable, by taking an ordinary sheet and throwing it over the top of the tub, so that the patient feels that he or she is not exposed, even though impelled by excitement to get out of the tub.

I have also noted in this connection a practice which I hope this article may help to counteract among manufacturers who furnish continuous bath outfits for hospitals. The literature which they send out and which contains photographs shows the use of restraint apparatus. Inasmuch as the continuous bath is being constantly installed in institutions which have had no previous experience or knowledge of it, I have no doubt that this method of advertising has had much to do with the use of restraint. Manufacturers are undoubtedly anxious to provide what is wanted and what is best, and I am sure that if they can be made to understand the real danger of the use of restraint they will cease to advertise in this way.

In addition to the absolute rule that no patient is to be restrained we have recently installed at the Government Hospital regulating valves in connection with the continuous baths, which are permanently and unalterably set so that no water can be admitted to the baths at a temperature higher than that at which the valves are set. These valves we set at a temperature of 110° F. The principle upon which they operate is a simple one and they would seem to be very safe. All mechanical contrivances, however, are likely to go wrong at some time, and, although they afford an added safety, still the nurse should never be permitted to leave the room, and should gain her knowledge of the temperature of the water from a bath thermometer and also from frequently plunging her hand and arm into the bath. It is also highly desirable that the continuous bath should be so located that the nurse should not be under any temptation at any time to leave it, and should not be subject to call.

Of all these precautions, however, the fundamental one and the most important is that the patient should not be restrained, because no person, no matter what his or her mental condition, unless seriously crippled, will scald to death in a continuous bath tub if free to get out. Even the most actively excited and confused will jump out of the bath tub if the water is hot. The reaction is too deeply biological to be seriously disturbed by mental clouding.

A new home for the Emergency Hospital, Easton, Md., has recently been completed. It is a three-story brick structure, with stone trimmings, and is of the colonial type of architecture. The cost of the building was $50,000. Fifty patients will be accommodated. The hospital contains a maternity ward, a children's ward, an invalid ward, diet kitchens, two operating rooms, an accident room, dispensaries, a laboratory and an x-ray room, and is modernly equipped throughout. The plans for the building were drawn by Architects Guy King & Co., Philadelphia.

The trustees of the New York Medical College and Hospital for Women, New York City, contemplate the erection of a $200,000 hospital building within the next year. A campaign to raise the money for this undertaking will be the first step in a movement for a combined building and endowment fund of $1,000,000.

Fig. 1. Walker Hospital, Evansville, Ind. The laboratory.

## A HOSPITAL OWNED AND CONTROLLED BY THE MEDICAL STAFF

### Walker Hospital, Evansville, Indiana, Has Kept Pace With Constantly Growing Clinic—Arrangements Conserve Time and Energy of Workers—Some Details of the Organization and Administration

By EDWIN WALKER, M. D., Ph. D., F. A. C. S., Member of the Staff

THE great changes in the science and art of medicine in the last generation have completely altered the methods of practice. The office of one or two rooms, with a few books and instruments which sufficed for the doctor, is entirely inadequate today. These matters have given serious concern to the progressive man, and the different methods used to meet modern requirements by each individual present many points of interest. How to provide an office which shall have all necessary appliances for clinical diagnosis and treatment, and hospital facilities which will give the best results, are questions every progressive man must solve.

Every doctor, be he physician, surgeon or specialist, must have a hospital to take care of his patients, and since he must choose one for them, he is responsible for their treatment. When the surgeon decides that an operation is necessary and sends his patient to a hospital he knows is not of the proper sort, he is assuming a grave responsibility.

He has three alternatives: to develop and dominate an existing hospital, do his work in the home, or build and own his hospital. Each method has its difficulties, and the preference is determined by the circumstances. How the solution was found by the establishment of a private hospital at Evansville, Indiana, this article will disclose.

In 1882 there was in Evansville a small sectarian hospital only, which was neither well equipped nor doing suitable work. Feeling that better facilities were needed, eight physicans organized a private hospital. An old hotel was bought and a very crude institution was established. Notwithstanding many obstacles, the advantage of having the entire control in the medical staff was apparent. Improvements were steadily made and better results were early attained.

In 1887 a training school for nurses was added. This was the second in Indiana and about the thirtieth in the United States. The work prospered and broadened, and in 1893 it was determined that a new and suitable building was necessary.

I want to say with particular emphasis that this hospital was called into being to meet the demands of a professional practice already built up, and that each increase in capacity was made to meet the increased demands of the growing practice. Many physicians establish private hospitals expecting thereby to acquire a practice, and failure is often the result.

How to finance the new building was the question. Most of the staff were unwilling to put money in so uncertain a venture. Drs. A. M. Owen and Edwin Walker acquired all the assets of the old hospital and built the new one, furnishing all the money and owning all the stock. This hospital, through all its changes and growth, has never sold a share of stock or any other obligation

to anyone, and the owners have been left absolutely independent of all outside influences. To distribute the stock to private individuals or to doctors who send patients to the hospital is apt to lead to a form of "fee splitting" which is a serious drawback to an institution. No church, lodge or other organization or individual has been asked to aid the enterprise.

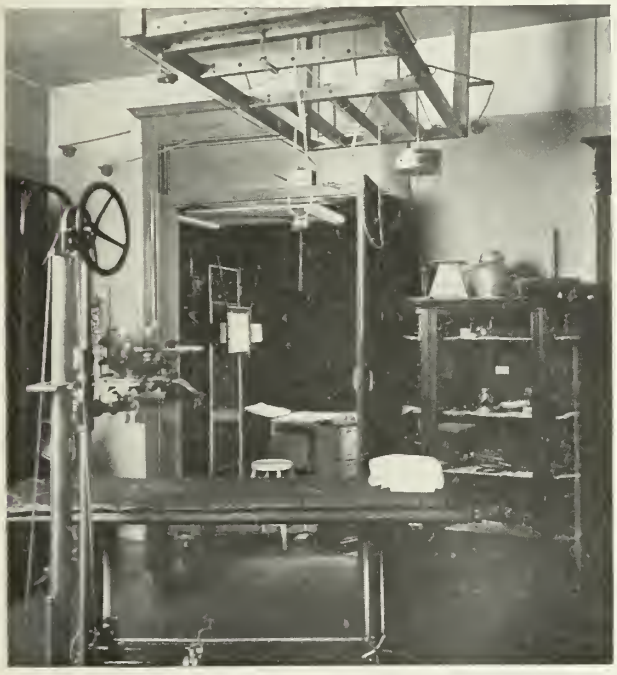


Fig. 2. Walker Hospital. The x-ray department.

In 1898 Dr. Owen died, and Dr. James Y. Welborn and Dr. Walker became the sole owners, and together have financed each addition and developed the work.

In 1904 Dr. W. R. Davidson joined the force, and later Dr. Charles L. Seitz became pathologist and Dr. W. R. Cleveland roentgenologist. The five doctors do the general medical and surgical work. The eye, ear, nose and throat work is done by the specialists in the city, and other internists are consulted in suitable cases. All surgical work, except the specialties mentioned above, is done by the staff.

These five men are natives of Evansville. The superintendent and her assistant, the chief office and operating room nurses, are graduates of this training school, and their homes either in Evansville or its immediate vicinity. There are twenty-five pupil nurses. We have found we do better with doctors and nurses who "grow up" with the work.

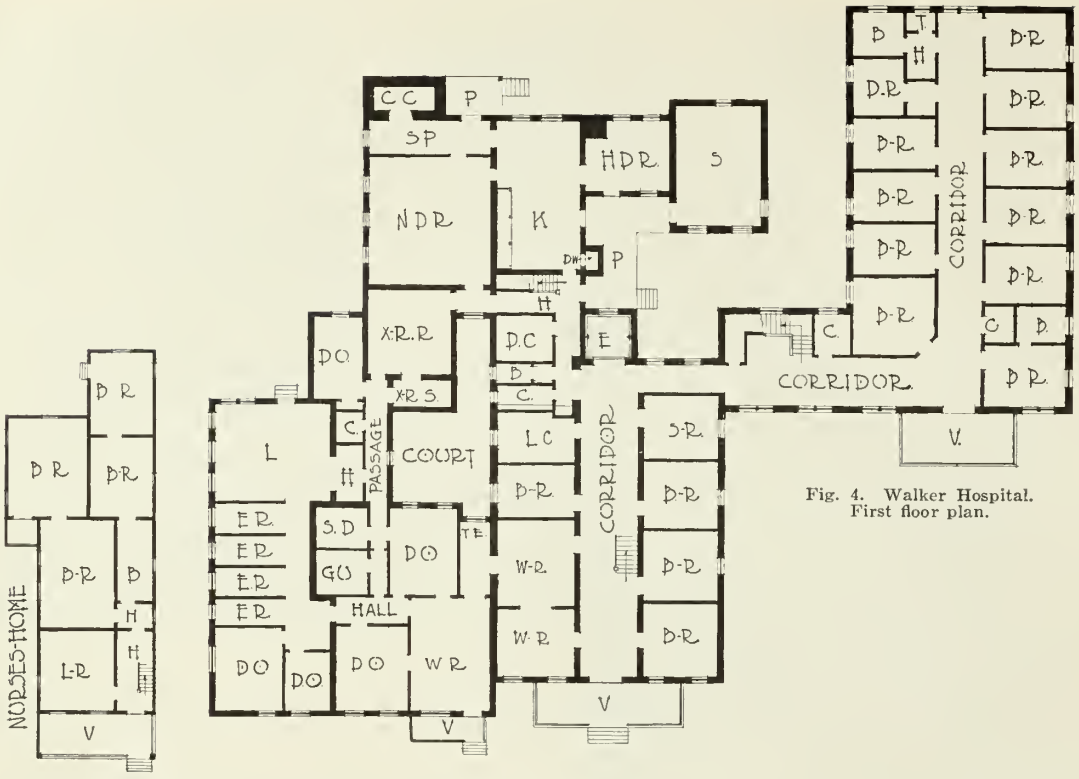
So the work has enlarged and required repeated additions to both the office and the hospital; in fact, the great strength has been the large general practice which has given us a clinic of great variety, as all kinds of cases come and their study broadens the whole staff. The patients of the hospital have been almost all surgical cases, because the capacity before the last addition was not large enough to accommodate many medical cases. This we considered a great disadvantage; a well-rounded work, we think, is much better. Our medical, surgical, obstetrical and special cases are now received and any can be placed in the hospital when it is desirable.

The methods of conducting our business may prove interesting. The keynote of it all is thorough examinations, employment of every means of diagnosis, and team work. Every patient is taken through a comprehensive investigation. Always two or three, and in obscure cases all, of the staff take part in the examination.

This we have found of great value, and often points are elicited which would escape the attention of a single examiner. It also develops all the staff and gives them a wider observation; they stimulate each other and aid in consulting authorities and all other efforts connected with clinical work.

Fig. 3. Walker Hospital. Diet kitchen.

The patient comes first into the waiting room and the secretary takes the name and address and places it in a drawer which passes from her desk through the wall into the doctor's room. The doctor has the patient brought into his office, asks the preliminary questions, calls one of the office nurses and directs her to take the patient into one of the examination rooms. Here the patient is weighed, the pulse, temperature, hemoglobin and blood pressure taken. The urine is also tested and the patient prepared for an examination. The routine is to go over the head, organs of special sense, mouth, teeth, throat, tonsils, chest, abdomen, pelvis and such special examination of the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extremities as may be required. If further examination is required, it is arranged for. The head office nurse gives any test-meal required, removes and analyses it. If a cystoscopic or rectal examination or other special exploration is necessary, a nurse prepares for these and notifies the doctor when she is ready.

Any special microscopical, clinical or bacteriological examination is made by the pathologist. Bowel movements or discharges can quickly be obtained and examined. The laboratory is fully equipped for all clinical work, and serological, chemical or bacteriological tests can be promptly

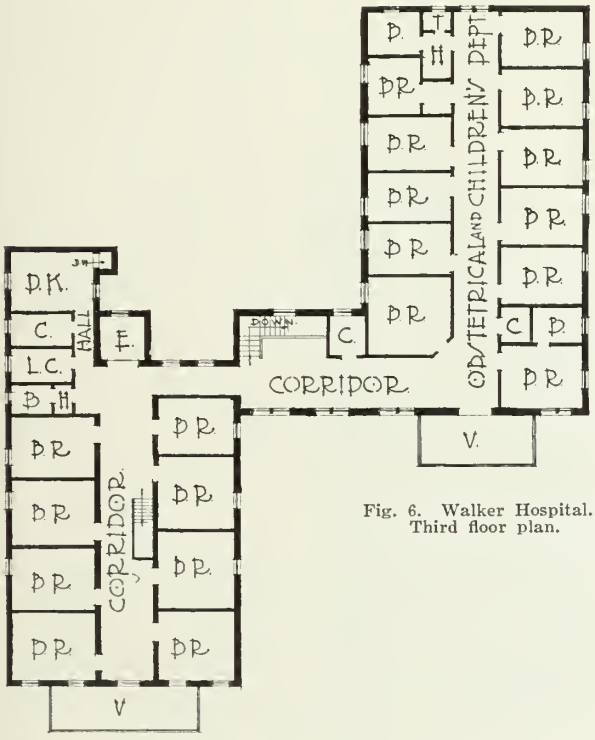


Fig. 6. Walker Hospital. Third floor plan.

made. The room is large and has two sinks, one in the center of the room and accessible from both sides, and there is plenty of table room and light, so that several doctors and nurses can work at the same time without interfering with each other. Much of this routine laboratory work is done by the nurses.

The roentgenologist is ready to make the fluoroscopic examination, or to radiograph any case which may require it.

Examination by all the staff is rendered more convenient by having fourteen examining rooms, which are accessible to all without going out to the reception room. The patient, being undressed, may remain as long as is necessary to give each doctor time to leave his other work and take part in the examination, and after the examination is completed the patient may dress and leave without interfering with the other work.

The great saving of time by having plenty of room and an ample force can be appreciated only by seeing the work in progress. Besides, a much more thorough examination can be made. By combined team work each man has a chance to show his special fitness. The same method is pursued with treatments of various kinds, irrigations of the cavities of the body, lavage, electrical applications, which are done by the doctors or nurses, as may be best.

Should the patient require further observation or treatment or operation, and is to enter the hospital, he is passed over to that department with written directions for what is to be done. These directions go to the head nurse on the floor, who gives orders necessary to carry them out. If an operation is required, a special written order goes to the operating room nurse, who has charge of the preparation. The time saved by having the patient near at hand is incalculable. He can be brought to the office at any time, or the doctor can visit him in his room without interfering with his work. This continuous observation is very valuable in many cases and any treatment can be better carried out by having a force large enough to look after all details.

All records are made on plain cards, 4x6 inches, and the information is put in the same place on all cards. We formerly had a printed card, but we did away with this because the space required for the different data varies so greatly in different cases. The object is to make everything brief and clear, using abbreviations, so that all that is essential can be put in a very compact form. Long histories are avoided, as one rarely has time to read them. We have used this method since 1899. These cards are convenient to handle and are large enough for most cases, and for those cases requiring longer history and those in which prolonged treatments are given, several cards, and if necessary, letters and memoranda can be clipped on.

The operations are also recorded on a separate card, kept in another file. No further cross-index is attempted except in such cases as are being especially studied, and these are kept by name on an index card. Cross-index of disease entails so much labor and takes up so much room that it can be useful only where an elaborate force gives its time to the work.

The hospital is located in a residence section, only one block from the car line and four blocks from the business section. It faces a small park, which, with the beautiful trees about the building, gives a quiet, secluded appearance not often attained in the heart of a city.

The lot frontage is 215 feet, and the lot extends through the block, giving an ample yard, which further adds to the attractions of the place.

The original hospital forms the main portion of the building. It is of three stories, brick and concrete, and of substantial construction. There is a central hall, ten feet wide, into which the rooms open. At the rear of this is an automatic electric elevator. Back of the elevator are the kitchen, store rooms, one of which, with walls and ceiling and floor of cork and cement, is being used for refrigerating purposes; a large dining room for nurses and another for help.

The laundry and water heater and sterilizer are in the basement.

On the second floor is the operating department, consisting of a supply room, two large operating rooms, one of which is arranged for a delivery room when needed, and a small operating room arranged for special operations, a wash room with a large sink, running water being used; sterilizing room, and a room for supplies. The walls are of hard cement with white enameled coating, and the floors are of artificial stone. The sterilizers and accessories are the usual pattern (Bramhall). The instruments and all other equipment are complete, representing selections made by the doctors in their trips abroad and to medical centers.

The new wing, which has recently been opened, is built farther back from the street so as not to interfere with the original building, and is connected by a cross hall, and, like the main building, has a central hall into which the rooms open. It is of three stories, of fireproof construction, of brick, stone, reinforced concrete, solid floors and partitions. The floors and baseboards and stairways are of terrazzo throughout. All plaster is hard and all angles are rounded. The best ventilation and light are obtained, as all rooms are outside.

The Waring system of heating is used and the steam is supplied by the public service, which gives steady, uniform heat day and night.

The lighting is by direct electric fixtures, except in a few rooms, which have the indirect. The signal lighting is of usual construction, except there are lights in the halls of both buildings, which register on all floors. The head nurse can see from any hall whether the signals are being answered promptly. There are the usual baths, with showers in each wing and on all floors; also six rooms have private bath. There are many wash stands, slop sinks, toilets and other modern conveniences. Each floor has its linen, clothes and storage closet. It is rarely necessary to go to another floor for anything.

The diet kitchens on the second and third floors are connected by dumbwaiters with the main kitchen, and the trays are prepared in these. Many articles of special diet are also prepared. Every effort has been made to save extra work and the labor of operation has been greatly reduced.

The hospital's capacity is 75 patients. There are no wards, but two beds in a room are used instead for the cheaper accommodations.

The office is a one-story building on the other side from the new wing and opens into the central building. The waiting room is entered from the street. In an alcove at the entrance to the main building is located the secretary's desk. The files for records and the telephone exchange are found here.

The two front rooms (see plan) are so arranged about the halls that one may enter either one without disturbing occupants of the other. Each member of the staff has his own room, with his desk and such personal things as he desires. Besides, there are four rooms 6x8 feet for general examinations, a cystoscopic and rectal room, and an x-ray department, with photographic, fluoroscopic, and developing rooms. The laboratory is 17x20 feet, giving ample room for all without crowding. The office has, therefore, seventeen rooms, and it is possible to have twelve patients undergoing examination or treatment at the same time.

The nurses' home is near the office and quite separated from the hospital. It is a two-story dwelling of modern construction and has every convenience.

Thus the members of a growing clinic built an office and a hospital to suit their needs and financed it all without resorting to any improper methods.

The success of the enterprise proves its fitness and shows that a private hospital and clinic can be conducted on a high plane and can be of real service to the community; and the united and loyal efforts of those taking part in the work has benefited all.

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Mrs. Edith L. Morgan, R. N., a graduate of the training school of the New England Deaconess Association, class of 1910, and for the last three years superintendent of the Charles Choate Memorial Hospital, Woburn, Mass., has lately assumed the superintendency of the Ensworth Deaconess Hospital, St. Joseph, Mo., which will soon occupy a new $125,000 building. Mrs. Morgan's predecessor, Miss Ethel Hastings, who had been in charge of the Ensworth Deaconess Hospital for six years, resigned her position some time ago on account of impaired health.

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Miss Rachel McEwen, formerly head nurse at the Massachusetts General Hospital, Boston, has recently been elected superintendent of the Charles Choate Memorial Hospital, at Woburn, Mass., to fill the vacancy caused by the resignation of Mrs. Edith L. Morgan, who accepted the position of superintendent at the Ensworth Deaconess Hospital, St. Joseph, Mo. Miss McEwen is a native of Canada. She is a graduate of the Massachusetts General Hospital in nursing, also in hospital administration, and has been connected with a hospital at Brockton, Mass., and with St. Luke's Hospital, New Bedford, Mass., as assistant superintendent.

## HOSPITAL OF HIGH-GRADE CONSTRUCTION BUILT AT A VERY LOW COST

### St. Joseph's of Chicago, Severely Plain in Design, but Arranged With Particular Reference to Economy of Administration and Simplicity in the Handling of Patients

By C. HUGH McKENNA, Chief of Staff and VICTOR ANDRE MATTESON, Architect.

A FAIRLY wide observation in this country and abroad into hospital organization impresses one with the thought that much progress has been made in medical and surgical technic, but that relatively little has been accomplished in hospital architecture to make possible the most efficient methods of technic with the least expenditure of energy.

As a general rule, other things being equal, we believe it is safe to state that the highest standard of efficiency will obtain in that hospital in which the maximum amount of service may be rendered with the minimum expenditure of physical energy on the part of the nursing service.

The foregoing statement does not presuppose a lowering of the standard of training of nurses, but rather the means by which the acme of success may come to those scientifically trained by presenting a real opportunity for progressive work based upon a convenient daily routine that must necessarily bring with it the highest type of professional service. For this reason we believe that the following observations will be of interest:

Fig. 1. St. Joseph's Hospital, Chicago.

In planning a modern hospital three essential considerations should be kept in mind, which, in the actual working out of the problem, seldom all materialize successfully in the same building. We refer to architectural considerations closely interwoven with the medical side of the purpose for which hospitals are built, and particularly in connection with the surgical department. These three all-important subjects deal, first, with asepsis; second, with convenience, with reference to the work of the surgical team; third, with arrangements tending to minimize the possibility of psychic shock. All three of these have to do with the welfare of the patient.

We know of but one hospital in which all three of these problems have been given successful consideration without increasing construction and operative costs. That one is the new St. Joseph's Hospital of Chicago, designed by Mr. Matteson, and built under his supervision at a surprisingly low cost. This is a five-story fireproof building, with a full story-high basement, and a sub-basement. While it is nearly a complete unit in itself, it forms an annex rather than an addition to the old building, and is the first unit of the future development of the hospital. The main entrance and offices are located in this building, and four of the stories are devoted to patients' rooms, of which half are provided with individual toilet and bath facilities, with rooms en suite. The patients' rooms are arranged and constructed in every way in accordance with the latest ideas in hospital planning, are well lighted and ventilated, and are practically soundproof, and every consideration has been given to both the comfort and welfare of the patient and the convenience and efficiency of the hospital work. The fifth or top story, in which there are no bedrooms, is entirely devoted to the surgical department, and it is to this department that this article is especially devoted. Before passing to this subject, however, it may be well to state that the massive, imposing and altogether attractive appearance of the exterior has been accomplished by the simplest means and at almost no expense other than that

Fig. 2. St. Joseph's Hospital, Chicago. First story corridor and office.

incidental to the covering of the concrete skeleton —which is actually exposed in places as a part of the exterior architectural scheme.

A diagram of the surgical floor of the new building is published with this article. The same floor of the old building is devoted to the maternity department and related operating rooms, the children's and babies' wards, the x-ray department, and laboratories.

In arranging the surgical department, the first thought was given to the segregation of surgical cases, and the classifying of the various types of surgical cases admitted to the various operating rooms. Pus cases were eliminated from the department entirely, a special room being provided for the purpose on the ground floor. Surgical dressing rooms are provided on each bedroom floor devoted to surgical cases, and are thus eliminated from the operating department. An emergency operating room is provided on the ground floor, near the ambulance entrance, together with its own complement of wash-up room, sterilizing room, recovery room, and preparation room. The main surgical department is entirely isolated from all other departments and contains four main operating rooms (two of which are provided with local sterilizing rooms), wash-up rooms, main sterilizing room, preparation rooms, and recovery room for emergency purposes. These are arranged with special thought toward absolutely clean operative work from the most exacting surgical point of view. From the diagram of the plan, it will be noticed that between each two main operating rooms is a surgeons' final wash-up room. In each of these is located an unusually large porcelain wash sink, provided with two spouts from which is obtained a copious supply of sterile water, the temperature being controlled by valves especially designed by the architect for this hospital, combining the advantages and eliminating the disadvantages of both the knee and foot operated valve. All water supplied in this department is sterilized, provision also being made for filtering it if desired. (Chilled drinking water is to be obtained from the same source, supplied to each floor and to all the more important rooms.) A smaller emergency wash-up sink is also provided in each operating room. The main operating rooms are furnished with daylight from wide double plate glass windows, extending from the ceiling to near the floor, and by clear plate glass ceilings covering 35 percent of the area of the room, supplied with light by skylights in the roof. Artificial light is furnished from high power electric lights distributed above the plate glass ceiling with transparent prismatic reflectors, thus furnishing an even distribution of light, and avoiding all dust-catching fixtures in the room.

Fig. 3. St. Joseph's Hospital, Chicago. One of the four main operating rooms.

Heating is accomplished by a double system of radiation located within the double exterior walls, the interior portion of which is constructed of heavy steel sheets, finished in white enamel so as not to be distinguished from the other walls of the room. Any desired temperature may be obtained by means of modulation valves. In the summer, heat may be obtained if desired from a

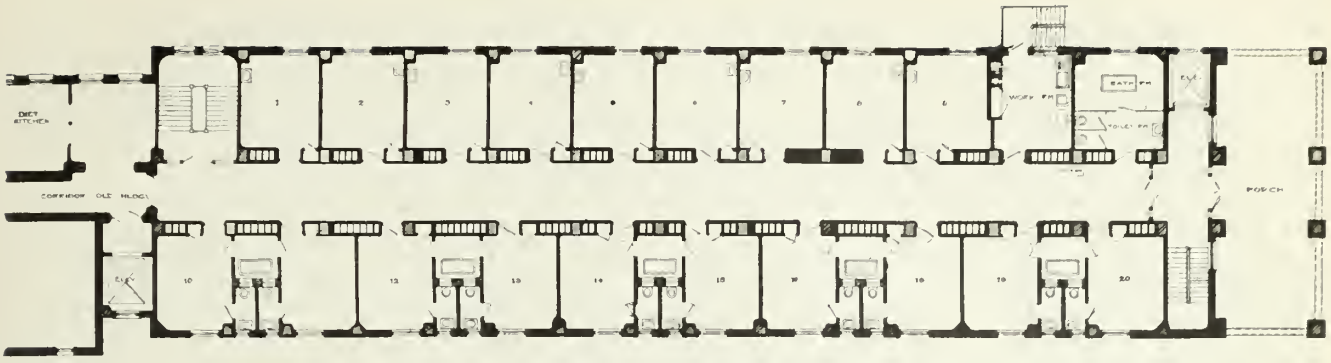

Fig. 4. St. Joseph's Hospital, Chicago. Typical plan.

second set of radiators located in the same space, connected with the high pressure steam system supplying the sterilizers.

The walls of the operating rooms are of hard plaster, with all angles finished with large coves, (which arrangement prevails throughout the building), and are finished in cream white enamel. The floors are of polished white terrazzo, with coved terrazzo bases to match. The amphitheaters, of which there are two, are formed of concrete with coved angles with white tile-paved steps or seats. The space below amphitheaters is warmed. Dust-catching fixtures are eliminated wherever possible throughout the building, and especially in this department. Care has been taken to eliminate dust wherever possible, but where impractical to do so materials have been selected such as will show the dirt as plainly as possible, and at the same time facilitate easy cleaning. A special elevator is provided, connecting this department with each story through vestibules, and with the ambulance entrance hall in basement near the emergency operating department. This elevator is used exclusively by patients and their attendants to and from the operating department. No one is admitted to the isolated portion of the operating department but properly prepared nurses, surgeons in gowns, and the patient. On the other side of the isolating glass partition of the main surgical corridor are located the eye, ear, and nose and throat department, the genito-urinary department, and rooms for handling simple fractures. Here also are the surgeons' consultation room, locker and dressing room, toilet and bath room, nurses preparation and toilet rooms, linen and bandage room (unsterile), and the entrances to the amphitheaters.

The third point, and not the least important of the three, is the question of psychic shock, a problem that is handled very unsuccessfully, if even considered, in most hospitals. The department, as here arranged, provides facilities such that with ordinary care the patient may be properly prepared and brought to the point of anesthesia without delay, and without being subjected to a confusion of sights, sounds and people, calculated to influence the mental condition of even those patients not normally of a nervous temperament.

The cost of the building, exclusive of architect's fees, 6 percent, and the furnishings, figures less than 24 cents per cubic foot. Boilers were not included, as steam is taken from a central heating plant already installed.

The work was let in one contract for the main items, so far as was possible. There were practically no extras, but such as there were, they are included in the following figures:

| | |
|---|---|
| Concrete construction | $ 47,800.00 |
| General contract (masonry, plaster, carpentry, etc.) | 88,000.00 |
| Heating and ventilation, plumbing | 30,200.00 |
| Electric wiring and fixtures | 8,100.00 |
| Elevators | 6,000.00 |
| Hardware, pneumatic clock system, etc | 1,600.00 |
| | $181,700.00 |

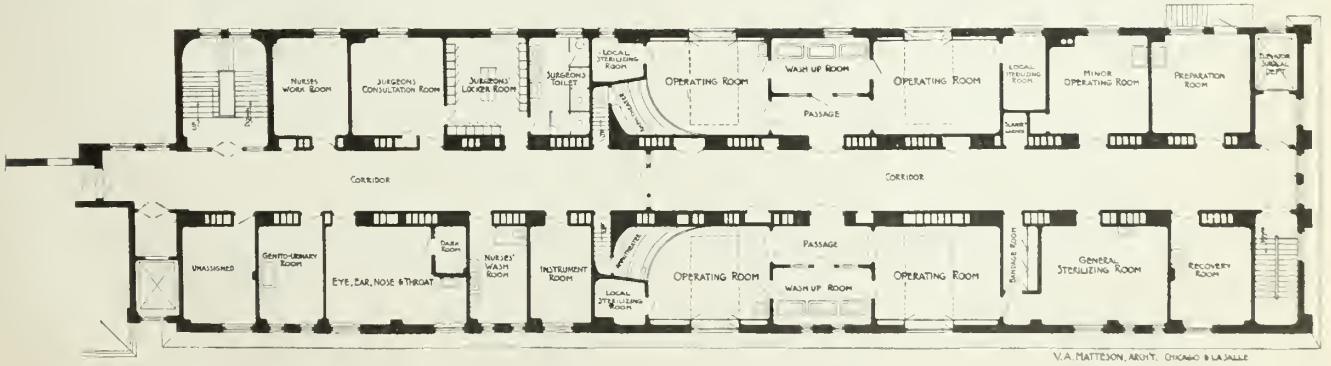


Fig. 5. St. Joseph's Hospital, Chicago. Fifth floor plan.

## COMPARATIVE SERVICE IN THE COMMUNITY HOSPITAL[1]

### In the Large Institutions Patients Are "Cases"; in the Small Hospital They Are "Just Folks"—Modern Hospitals Planned by Architects Are "Nurse Killers"—Some Suggestions for Improvement

By NETTIE B. JORDAN, Superintendent Aurora Hospital, Aurora, Illinois

THE community hospital, like the small library, the township high school and the small municipality, has come to stay. It has come to stay because popular demand has made it imperative, and it matters little what restrictive measures the leaders of great hospitals may advocate.

The little hospital may be like an unwelcome child, but since it is in existence all the parents can do is to cherish and train it and bring out its best possibilities.

The great hospitals have departments such as are almost unknown to the small institutions, and which in some instances would be nearly useless to them. In the majority of small hospitals only acute cases are cared for and these it would be injudicious to send to a distant city.

I have obtained data, covering a period of years, from physicians and nurses who have had their training in large institutions and later have been identified with small hospitals; and I wish to give a fair comparison and point out the weaknesses to be found in both classes of institutions.

In both classes of hospitals boards are selected, in a similar manner, from people who have been liberal in donations or who represent an influential clientele connected with the hospital. The duties of the boards in both small and large hospitals are similar, and the greatest difference seems to lie in the fact that the members of the large institutions are more constructive and increase the institution's field of usefulness, while those of the smaller hospitals follow up individual cases and endeavor to eliminate personal grievances. The individual in a small hospital is something more than "a case."

In comparison of locations the large hospital yields to the smaller, for there is usually a decided advantage in being located in the cleanest part of the city and in having sufficient air, which is conducive to good sanitation.

The planning of the small hospital and the quality of construction is neither better nor worse than that of the large institution. Taking them collectively, I think most of them are rather badly planned. Architects are doubtless good men at heart, but when I see what "nurse killers" they can design out of wood and stone, I almost suspect them of being lacking in chivalry. Nurses are the most important working capital in the hospital; yet little consideration is given them when buildings are planned and built. I once asked a nurse what gift would be of the greatest benefit to her work, to which she replied, "A horse would be the most acceptable gift; there are such distances to travel, with cart-loads of things that are beyond a woman's strength." There is more truth than jest to this statement, and I am sure the future hospital will give more thought to the relation of the arrangement of patients' rooms to the nurse service. To give to the subject of faulty construction sufficient space, with examples, would take more time than most people can spare.

If hospitals of the future are to succeed they must not follow too closely the plan of present institutions, especially those in Europe; the fact of the high mortality rate in the foreign hospitals should alone discourage this policy. We should plan nowadays to include the educational and sociological departments, which are a growing necessity and must be a future reality. Each new hospital should be built, not only to meet the need of the hour, but for the years to come.

I shall welcome the day when a national committee of the American Hospital Association shall act as censor of hospitals to be built. Each hospital would then be built to meet the actual local conditions and would not be out of proportion to its civic need. The new County Hospital in Chicago, from the standpoint of service, is both a good and a bad example of non-conformity to comparative conditions; it reminds one of a Paris gown worn at a country fair.

Women superintendents, it seems, are in the majority as administrators of small hospitals. Many of these women have come from large training schools where they have a keen insight into organization. The woman will succeed if she has native ability enough to be able to adjust herself to a small hospital and the people most vitally interested in it, and she succeeds best who learns early that the sick are "sure-enough people" and not merely cases. She has to realize that every man or woman, no matter how poor, is an employee of some more influential person who will listen to any story of hospital discourtesy. The man may be the gardener or janitor of one of the powers in the community. The woman may be a laundress, or she may be on the charity list of one of the best families. So it is impossible to disregard the feelings of any who may come under the hospital's care.

The women who are succeeding best have

adopted some of man's poise and are not guilty of "nerves." They do not make erratic decisions, but analyze a situation and exercise cool judgment. They must have humor enough to take the world as it really is, and be generous enough to appreciate the good in everybody, analyzing people's limitations and using the magnifier on the wholesome qualities and smoked goggles on the faults.

Sometimes the good-will of the most lowly may be an influence easily recognized. Many women think their technical training qualifies them to meet every condition, but they fail because they are so lacking in magnetism that people do not like them, and they cannot understand why. It is well to have a versatile mind that can meet a round situation with a square decision, but a large element of success radiates from a pleasing personality. Military dignity is not appreciated by the great rank and file of people who, after all, are "just folks."

Wherever a board of trustees fails to get broad women for the positions, there are frequent changes, and the service is always in a state of disorder.

It is a pathetic truth that there is not a school in the United States that offers a practical course in hospital administration. Some of the large training schools, as well as universities, give courses which apply to nursing, but not a business training that can be applied to small hospitals. The larger institutions will always be able to command the greater endowments and funds for educational and research work, and it is to them we must turn our appeal for assistance in this educational feature in hospital management. There are far too frequent changes in hospital administrations, and many a promising career is chilled in infancy and never quite attains the real fire of ambition.

There are many people who have been connected with large institutions who feel as I do regarding the personal relation borne by the nurses and doctors of the small institutions to their patients. It is a source of great comfort to be surrounded by people who have not let go of the human side of the medical science and who really care whether patients recover or not.

Nearly all the men who operate in the community hospitals have been interns in some larger institution and have taken post work both in this country and abroad; then, adding the personal equation to their skill, they meet the community's need in a very satisfactory manner.

Competition is keen and physicians are required to give their best service at all times or they find that the mercury of public approval can drop a great many degrees in a short time. In this age of specialists the term "family physician" in the large cities is rapidly becoming obsolete.

Unless the great institutions get back a little of the human side of medical and nursing care, the little hospitals will always be dearer to the hearts of the people and will take precedence over them in restoring the sick public to their respective places in the world scheme.

In conclusion, I will say that for the small hospitals I prescribe better records, less frequent changes in administration, a more intimate association with the scientific work done in the educational centers; and to the great hospitals I suggest hospital accommodation for the self-respecting person who is neither a pauper nor a millionaire, and more personal and humane treatment.

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## ARE PUBLIC CLINICS TOO EXACTING?

### A Student Applicant Wants to Know What Is the Test of Acceptability as a Patient?

We quote the following letter from a recent issue of the *New York Times:*

To the Editor of the *New York Times:*

Has a student the right to use the city's free clinics? Or, in order to secure proper attention, is it necessary for one to wear all the external signs of poverty, including uncleanliness?

An art student who found herself for the first time in her life in need of an oculist, and who couldn't pay the fee he asked, was advised to go to a certain city institution for free treatment.

At the information desk of this institution she was questioned by a virtuous ramrod, who wore big spectacles, doubtless to show how wise anybody can look with the proper eye fixtures. It must be admitted, to the credit of the discerning faculties of the ramrod, that the student neither was unclean nor did she wear earrings and a shawl. But it might be well to add that her pumps were two years old, her shirtwaist she had made herself, her hat flaunted a scarf which, years ago, had been her mother's, and she wore no gloves, so that she might save those she had for cold weather.

After several preliminaries the ramrod asked the student how much salary she received when she worked. "I don't get a salary," she answered. The ramrod argued this point with her victim, but the problem was too much for her intellect. She got mad.

"You can't pay a doctor?" she snapped.

"Why should I have come here if I could?" said the student.

"You had better go to a doctor. This clinic is for the poor," said the ramrod, gave the student a green paper bearing the addresses of several eye specialists, and, with a good deal of rudeness, dismissed her. There was no appeal.

Then the student went out and found a superman doctor, who understood how one could be neat and clean and yet not be able to pay a physician's bill, and how one could work and not receive a salary.

In the face of these facts, I ask this: Is the student of less value to the city than the picturesque tramp, or, at any rate, than that class of people which necessitates "Beware of Pickpocket" signs in the clinics, that he should be refused medical aid when he needs it?

I am really sure that this is not the case, and so, since the city must be represented in its institutions by various paid officials, I would suggest an examination for such, composed of questions suitable to a limited degree of intelligence and reading, for instance, like this: Can you distinguish any shades of class difference which might occur in the range from pauperism to moneyed aristocracy? Or, how can a man work and not get a salary?

R. KATE FELKER.

## LIABILITY INSURANCE FOR PROTECTION OF HOSPITALS

### Laws Are Unsatisfactory, and Juries Lean Toward Plaintiffs—Ambulance-Chasing Lawyers Complicate a Badly Mixed Situation—Wisdom Therefore Prompts the Setting Aside of Fixed Premiums Rather Than Taking Chances

By HERBERT T. WESTON, M. D., Aetna Life Insurance Company, Accident and Liability Department, Hartford, Conn.

THE above title is descriptive of a form of liability insurance designed to protect the owners of hospitals and sanatoriums against losses that arise through claims that are made by patients or their heirs or estates for damages on account of injuries or death occurring by reason of or in connection with actual or alleged errors in the treatment or care furnished them at the institution. The desirability of this kind of protection has been repeatedly demonstrated.

The increase in the number of these cases can be attributed to several factors, an important one being the taking effect of the various workmen's compensation laws, that have deprived a certain class of attorneys of a source of income; these attorneys are now seeking cases that previously were not as desirable from their standpoint.

In conducting the defense of such cases it is found that:

Rules of law are changing.

Juries are awarding more and larger verdicts.

New issues, theories and lines of evidence are being developed.

The burden of proof is constantly shifting to the disadvantage of the defendant.

The principles governing the trial of such cases are not fixed at present either by statute or decisions; but are in course of being developed. The rules defining the duties and obligations assumed by the institutions when admitting a patient are not at all well defined and may properly be considered to be in a state of development, with a constant tendency to become more drastic and increase the probability of loss if any error or even neglect or failure to perform some proper act can be shown.

The tendency seems to be toward holding a hospital to a more strict accountability than a physician or surgeon, not only as regards the acts of their employees, but also the acts of interns or others over whose connection with the institution it has a privilege of selection.

On account of the better equipped attorneys that we may expect to find appearing for the plaintiff in these cases, we must also expect that new causes of action and theories of damage will be evolved; in fact, this condition is now apparent and its effect is quite perceptible in recent cases.

A case that specifically illustrates this point is one in which a verdict for $2,500 was recently awarded the plaintiff; the circumstances may be described as follows:

A bookkeeper, married, nineteen years of age, working and living in a damp climate, applied to a hospital corporation for treatment for what he supposed was an attack of la grippe; later he developed pulmonary tuberculosis. The claim was, that on account of the hospital physicians failing to warn him against continuing his employment and living in the damp climate, and failing to advise him of the danger of his developing tuberculosis, he was damaged and prevented from properly caring for his health; he also claimed a mistake in diagnosis as aggravating the damage. A verdict granted upon such claims will probably be reversed in the higher courts, but is referred to here to emphasize the present trend of this class of litigation. If an appeal is taken in this case the expenses to be incurred, win or lose, will not be an insignificant sum and there is always at least a retrial and its expenses in prospect, even if the appeal be successful.

The expense connected with the successful defense of such suits is usually a large sum; if it were possible to learn the total amount so expended during the past five years, it would probably be found to be largely in excess of the total of all judgments paid.

While the plaintiff's attorney is only gambling his time against the possibility of winning a substantial part of any judgment recovered, the defendant is forced to employ the best equipped and most competent counsel obtainable, in order to be sure of presenting the best possible defense and overcoming the prejudice of the jury toward the individual, or take the chance of losing the case. The services of counsel so qualified cannot be obtained for nominal sums. The information upon which to base the selection of counsel is not always obtainable, even if the cost of such service can be wholly disregarded.

In this connection it must be remembered that the publicity incident to a jury verdict being obtained in any community has the immediate effect of causing other claims, both real and imaginary, to be made and suits started, all of which necessitate proper defenses to be made.

In addition to claims and suits originating from

such a course, it seems necessary to call attention to the systematic campaign for securing such cases that is being conducted in some of the larger cities through organizations maintained by what have been styled "ambulance-chasing lawyers." It is true that the work of such organizations has been mostly confined to the larger cities, up to the present; but it must be expected that the same practice will rapidly reach the smaller communities, for unfortunately the congested districts have no monopoly of such men.

When a judgment is collected, a jury verdict rendered or a compromise settlement effected, there is an incentive for other claims to be made. The period within which these claims may be brought and maintained corresponds with that provided by law for the outlawing of other tort actions. This results in a condition being present that places the owners of hospitals and sanatoriums in a very peculiar position. One claim successfully prosecuted causes others, that have not outlawed, to be brought, and in this way heavy losses may arise, which must be cared for during a limited period, thereby seriously interfering with the available funds and finances of the institutions.

There can be no possible objection to calling attention to this point, especially when it is well known that in many of these institutions it requires a continued effort and the closest attention to detail to keep finances in a condition permitting efficient operation. On this account the payment of large sums that are required for legal expenses, and the payment of settlements and judgments will be very apt to cause serious embarrassment, unless these payments have been provided for in advance.

Only by the purchase of hospital liability insurance can demands for funds, with which to pay such losses, be cared for in advance. The premium for this protection should be considered as necessary an item in the annual budget as fire insurance premiums. The payment of such premium secures the services of the entire organization of the insuring company as your attorneys in fact for the handling of such cases without additional expense to you for such service. The success of their acts is guaranteed by the capital and surplus of the insuring company up to the limits of protection purchased. The selection of a particular company from which to purchase such insurance should only follow the most careful investigation of: policy forms, security, general practices, attitude towards policyholders, and particularly the quality of service that may be expected as indicated by the history and reputation of the insurance company.

The fact that these hazards have not been sufficiently appreciated and chances have been taken is no reason why such a course should be continued, especially when the owners of these institutions can secure complete protection against every claim that may be brought by a patient on account of acts alleged to have been committed during the insurance period, only excepting acts shown to have been committed while the attendant was under the influence of narcotics or intoxicants or while engaged in or in consequence of an unlawful act. The purchase of such insurance converts an unknown loss or liability into a fixed charge that can be provided for in advance. It does away with any question regarding the selection of proper counsel to defend such litigation. It also enables the purchasers to avail themselves of the specially trained employees of the insurance company in all matters in any way connected with this problem, and gives them the benefit of the wide experience secured through the continual handling of these problems, as well as other closely related incidents. It protects the funds of the institution against attack or diversion from the purposes for which they are designed. It assures those conducting such institutions the opportunity of presenting a united front toward attacks of this kind.

The point might be raised, that the need for such protection has not yet been demonstrated in many localities, but in view of the fact that these claims can be in abeyance for years, it would seem as if an immediate recognition of the conditions that are bound to develop and the preparation in advance for meeting them properly would be dictated by good business judgment. Otherwise it is probable that the gradual development of adverse conditions will reach a point where they will place the owners of such institutions at a decided disadvantage.

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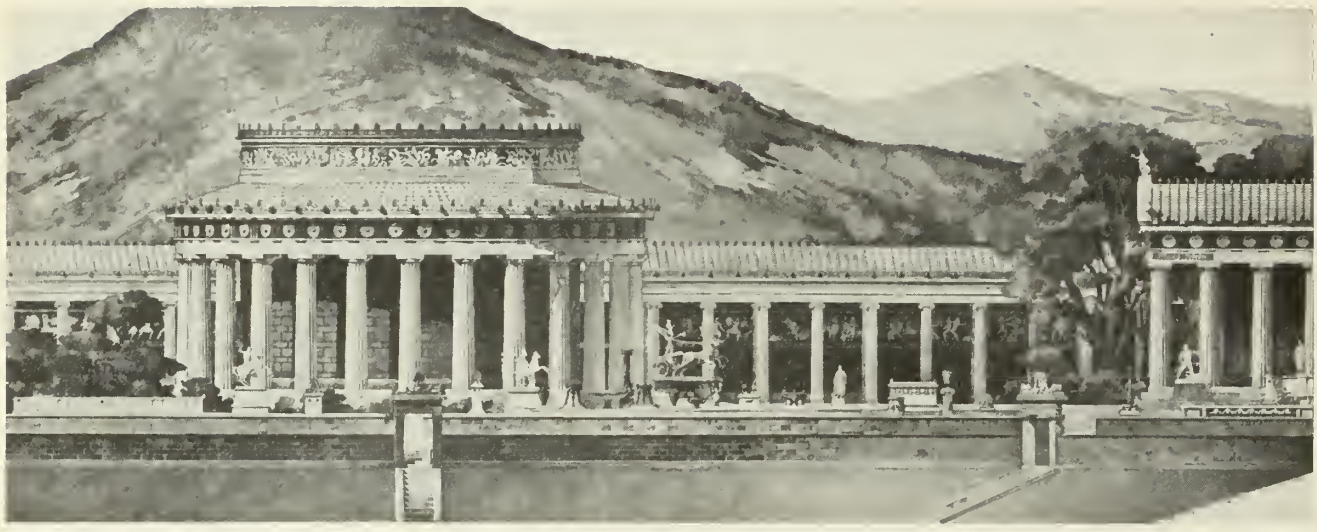
A golden jubilee celebrating the fifty years of service of Dr. Norman Bruce Carson, at the St. Louis Mullanphy Hospital, was held last month by physicians, nurses, Sisters of Charity, former patients and other friends of the doctor. Dr. Carson, who is now chief of staff at the Mullanphy Hospital, is said not to have missed a day at the institution during the last fifty years. The program of the celebration included addresses by Dr. F. G. Nifong, Dr. Joseph Grindon, Dr. F. J. Lutz, Very Rev. M. S. Ryan, C. M., D. D., Acting Chancellor Francis Alden Hall, of Washington University, and Dr. Ellsworth Smith, paying tribute to Dr. Carson's professional skill, his faithful service to the hospital, particularly in building up the training school, and also to his activity in charitable work. Dr. Carson was born in Pennsylvania in 1843 and moved to St. Louis with his parents when four years old. He was graduated from the old St. Louis Medical College and immediately went on the staff of the St. Louis Mullanphy Hospital, with which he has since been connected. He became chief of the hospital staff at the death of Dr. E. H. Gregory in 1906. Dr. Carson is professor emeritus of surgery at Washington University, surgeon at the Barnard Free Skin and Cancer Hospital, president of the St. Louis Surgical Society, and former president of the St. Louis Medical Society.



The Tholos. The Abaton. The Temple
Fig. 1. Restoration of some of the principal buildings of the Hieron of Æsculapius at Epidaurus.

## AN EARLY GREEK SANATORIUM AND DISPENSARY

### The Hieron of Epidaurus—The Chief Seat of the Worship of Aesculapius—Temple of the Mythical Father of Medicine—Other Important Buildings of the Epidaurean Group

By JAMES MOORES BALL, M. D., St. Louis

THE front cover of this issue of THE MODERN HOSPITAL shows a picture of the Tholos, or Thumela (sacrificing place) of the Hieron of Æsculapius at Epidaurus, as restored after the researches of Defrasse and Lechat[1], which were conducted under the auspices of the French Government.

In Argolis, situated at a distance of about six miles from the coast, are to be found the remains of what was once the most famous of the many Greek temples erected in honor of Æsculapius. The town of Epidaurus is located near the sea, but the large group of medical buildings was situated inland.

Æsculapius, or Asklepios, was first mentioned in the Homeric poems as a Thessalian king, not as a god; but divine honors were given to him in later times. Although medicine among the Homeric Greeks was quite distinct from religion, the worship of Æsculapius as the god of healing is worthy of notice.

Greek temples of medicine (called asclepia) were numerous, and in the work of Schulz[2] more than sixty of them are described. The temple at Epidaurus and that on the island of Cos were particularly famous. To these and to similar shrines sick persons were conveyed in order to be cured, just as in modern days relief is sought by means of a devotional pilgrimage, or from the waters of a sacred spring. Then, as possibly is done now, relief was sometimes sought by deputy. The patient, or his representative, after ablution, prayer and sacrifice, was made to sleep upon the hide of the sacrificed animal, or at the base of a statue of the god, while sacred rites were performed. During the night the proper remedy was indicated in a dream. A record of the case—particularly if it were successful—was made on the columns or walls of the temple or on a votive tablet.

The worship of Æsculapius passed from the Greeks to the Romans and extended to all countries subjugated by the two nations. The Æsculapian temples were both hospitals and places of worship. None but the initiated could enter these shrines. Only the priests could look upon the columns of Hygeia at Ægeum; no dog was permitted to enter at Delphos; no child could be born at Epidaurus, and no one was allowed to die within its grounds.

It was in the valley of the Hieron (consecrated place) that a noted group of buildings existed in early days. In these the worship of Æsculapius was carried on for a long period.

Richard Caton[3] has given us his idea of an outline restoration of the buildings—a plan which does not profess to be accurate. The difficulties attending the identification of the various structures were mentioned by Valentine Mott.[4] He said: "We found in several places confused heaps of ruins, which, however, were not sufficiently de-

[1]Defrasse et Lechat: Epidaure restauration & description des principaux monuments du sanctuaire d' Asclepios. Paris, 1895.

[2]Schulz: Historia Medicinæ. Lipsiæ, 1728.

[3]Caton: The Temples and Ritual of Asklepios. Hertford, 1899.

[4]Mott: Travels in Europe and the East. N. Y., 1842.

of Æsculapius. The Temple of Artemis.

fined for one to say positively to what character of edifice they belonged, or whether they were a part of the temple or of the ancient city of Epidaurus." The Hieron group included the Propylæa, or ceremonial gateway; a large quadrangle about 250 feet square; the temple of Æsculapius, or central shrine; the Abaton; the Tholos, etc.

In the temple of Æsculapius was a statue of colossal size, the handiwork of Thasymedus, made of gold and ivory, which represented the god of medicine as an old man seated on a throne, holding a staff in one hand and resting the other on the head of an enormous serpent. A dog, the emblem of vigilance, lay reposing at his feet. The whole figure bore a striking resemblance to that of Zeus.

The theater is said to have been built about the year 450 B. C. by Polycleitus, architect of the Tholos. Pausanias states it was the most interesting of all the theaters existing in his time; and Mott[4] says: "This immense theater, incredible as it may seem, would accommodate within its enclosure, I should imagine, at least 30,000 persons." Caton[3] tells us that "the acoustics of the theater are perfect; a sound little louder than a whisper uttered on the stage can be heard in every part."

In Fig. 1, extending across two pages, the Tholos is seen at the left, the temple of Æsculapius in the center, and behind both the Abaton, a long portico, open on the side shown in the picture, and walled on the other.

The Tholos is declared to be the most beautiful circular temple ever built by the Greeks; it was built by Polycleitus the Younger, and took twenty-one years to build. One theory holds that the Tholos was a drinking fountain, where rose a healing spring; another theory is that it was used for minor sacrifices. Below it is a labyrinth, which may at one time either have been a cistern or the home of the sacred serpents.

The temple of Æsculapius was the central shrine, and was richly decorated and colored. The Abaton constituted the main ward for the sick, and was furnished with pallets, lamps, tables, altars, etc. It contained room for about 120 beds, and it is believed that the open-air feature of the Abaton may have been a great factor in such cures as were effected. Other buildings about the grounds, not shown in this picture, are thought to have been used to house patients, and the total capacity of the Hieron is estimated to have been some five or six hundred patients.

In front of the buildings shown in Fig. 1 is seen something resembling a sunken pit. This is the Stadium, which seated 12,000 to 14,000 spectators. The presence of a stadium in connection with a hospital is strange to modern ideas; but in the Greek mind athletics and health were doubtless closely associated. It is probable that multitudes of athletes and Greeks who merely wanted a holiday came to the Megala Asklepia just as they did to the Isthmian or Olympic games.

The technic followed by Æsculapius and his disciples is largely a matter of conjecture. It is known, however, that the large yellow snakes, with which the valley abounded, were held sacred, and were supposed to exercise a healing power by licking with their tongues any affected part of an invalid. The snakes were harmless and quite tame, and the sick were in the habit of feeding them with cakes. The dog, as well as the snake, was sacred to Æsculapius, and dogs in the temple were trained to lick any ailing part of the patient.

Miraculous cures were claimed for all sorts of illnesses, and history shows that the Greeks were not a whit behind the ignorant of modern times

[4]Mott: Travels in Europe and the East. N. Y., 1842.
[3]Caton: The Temples and Ritual of Asklepios. Hertford, 1899.

in gullibility. One inscription tells us that the god cured dropsy by the method of cutting off the afflicted person's head, holding him upside down till the fluid drained off, and then replacing the head. Blindness and paralysis were often cured by the licking action of dogs and serpents.

In later times, however, we find many common-sense practices carried out. Dieting, hot and cold baths, poulticing, massage, counter irritation, and light exercise were frequently prescribed. The pharmacopeia was limited, and included such things as hemlock juice, hellebore, squills, and lime water.

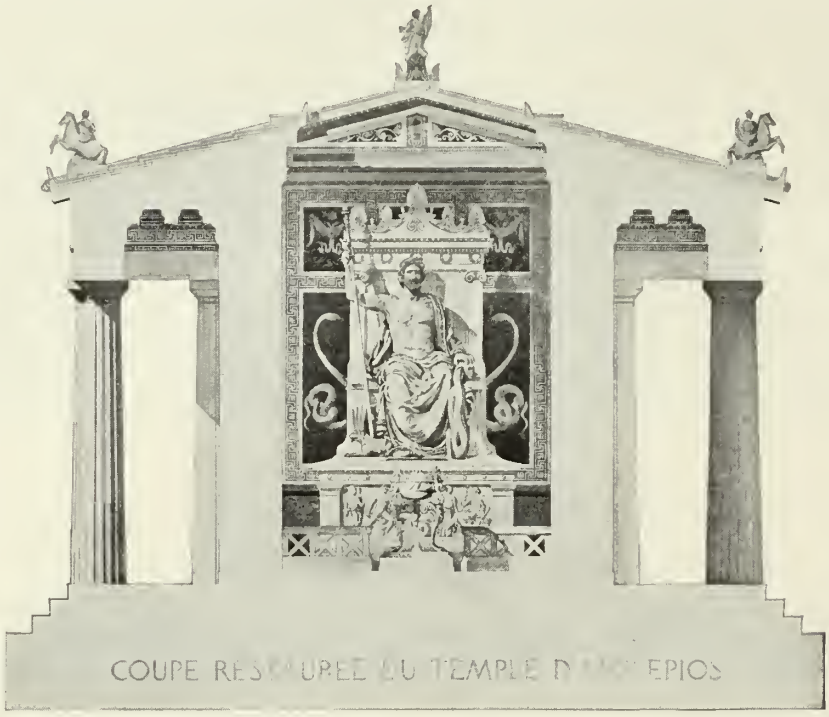


Fig. 2. Chryselephantine statue of Æsculapius, which stood in the temple of Æsculapius.

The Hieron and its environments exercised, however, such therapeutic effect as there may be in beauty. Nothing was spared to make the buildings magnificent monuments. Marvelous sculpture, scores of statuary figures, busts, groups, colored bas-reliefs, pediments, shrines, decorative vases and fountains, doors of ivory inlaid with gold—such things must have impressed the sick with the power of the god. Large and lofty trees formed groves, low mountains made a view wherever one turned, and soft breezes and the pure mountain air undoubtedly had a part in many recoveries. A library furnished occupation for the scholarly, and music, religious dances and festivals made the time pass pleasantly, and probably induced a hopeful and beneficial condition of mind which aided recovery.

## THE TECHNIC OF PRACTICAL ROUTINE FIRE DRILL IN HOSPITALS

### A System That May Be Practiced Without Alarming or Disturbing Patients—Simple Rules for Handling All Available Help

By BYAM HOLLINGS, M. D., Assistant Resident Physician Massachusetts General Hospital

THE question of fire drills has arisen in the minds of all hospital administrators. Are they worth while? Or is the hospital, theoretically, well protected by its construction, fire equipment, and proximity to a fire department? These matters have received consideration at the Massachusetts General Hospital, and in spite of the fact that many of the hospital structures were fire-proof and the fire equipment was ample, it was decided to institute the fire drill.

The object of the drill was to assemble a number of orderlies, mechanics, nurses and interns at a given point in the least possible time. This drill has proven of value. The method pursued is shown by the rules cited later. A nurse, at the suggestion of one of the assistant resident physicians, calls the office switchboard, merely stating the words, "Drill, Ward C," or any other given spot. The operator then follows a given routine. As a result it was found that from fifteen to twenty persons arrived at the selected spot in two minutes, with a large chemical fire-extinguisher and smaller extinguishers. It is doubtful if any other method can summon competent help as satisfactorily as a fire drill thus held at regular intervals.

The ward mattresses are equipped with four substantial loops at each side, and near the ward entrance are poles of such size that they may be pushed into the loops and the patients thus be carried in a mattress stretcher to a safe place.

In addition to bringing the fire extinguishers the orderlies are required to make ready these mattress bars in preparation for the removal of the patients.

The fire signal indicates where the fire is located and that it is to be attended to immediately.

"Drill, Ward 30," or "Drill, Ward C," means that there is a fire in Ward 30 or in Ward C.

FIRE RULES

A hospital employee, house pupil or nurse should telephone immediately to the information office the location of the fire if fire is noticed in any hospital building.

TELEPHONE OPERATORS

1st. Ring alarm at door of the admitting physician's office.

2d. Notify superintendent on duty, senior assistant resident physician, and Dr. Washburn.

3d. Call on the "Doctors' Call" telephone system, with all switches in use, to entire hospital, "Drill, Ward 30," or "Drill, Surgical Building," or whatever ward or region the fire may be in. Call three times distinctly. Repeat.

4th. Call the same signal on the house telephone, calling first the accident ward, then orthopedic shop, and all wards.

WARD TENDERS

1st. Report at once to scene of fire whether on duty or not, unless occupied in some unavoidable work such as a surgical dressing, or wheeling a patient, etc.

2d. Report to person in charge of fire.

3d. Close doors and windows, unreel hose, and bring in extinguishers and mattress bars.

4th. Elevator man to take elevator to basement for large chemical extinguisher.

5th. Accident ward man to go to ambulance men's sleeping quarters to make sure call is noted. Between 12 and 1 p. m. and after 5 p. m. on week days, and at any time on Sundays or holidays, obtain aid from ambulance quarters, unlock elevator and go to basement for large fire extinguisher.

NURSES

1st. Report location of fire by telephone to information office; be sure message is received.

2d. Nurse in charge to bring in extinguisher and direct unreeling of hose.

3d. No nurse is to leave her ward unless ordered to do so, or until all patients have been removed.

4th. Supervisors will report at fire.

5th. Head nurses shall send ward tenders to region of fire, if possible.

MECHANICS

1st. Report at once at region of fire.

2d. Machinist first to call elevator to basement.

3d. Two men from surgical apparatus shop to take large extinguisher in basement to fire.

SUPERINTENDENT ON DUTY

1st. Report at once at scene of fire and take charge until relieved.

AMBULANCE CORPS

1st. Notify men's quarters, also domestic building.

2d. Assist accident room man on Sundays and holidays, and between 12 and 1 p. m. and after 5 p. m. on week days; bring elevator to basement for large chemical extinguisher which is to be conveyed to the fire.

3d. Report at garage.

The fact that there is a definite routine to follow in an emergency such as a fire is an advantage in itself. At such a time it is well for the regular employees to know what to do and how to do it.

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### A New Bed Chart Holder

One of the problems in hospitals is the keeping of bedside records from the annoying inspection of patients and curious visitors, and at the same time to have the records readily accessible, and in clean and preservable form, the sheets firmly fixed so as not to fall out during handling or when hung up at the patient's bed.

I gave up a great deal of time to this problem. I visited several hospitals throughout the country and made rounds of the different stationers. I experimented with a number of devices of my own construction, two of which I had patented and which after a critical trial proved failures. At one time I thought I had the proper holder in a book cover, covered with cloth with a spring back. I soon found that the covers became dirty, could not be cleansed and tore easily. I then had the covers painted but that was unsatisfactory.

It then occurred to me that if I could get the identical "book cover" made up in a light metal, like aluminum, which could be easily cleansed, it would be the ideal thing. I had such a chart holder made up. It is a strong sheet metal holder, and unquestionably the most satisfactory device of its kind. It is made entirely of aluminum and is not affected in any way by moisture. It has a strong steel center rod and a coiled spring of great strength, securely reinforced and riveted and positively guaranteed against any defect in workmanship or material. It has a capacity for paper one-fourth inch in thickness and made with double hinge for flat opening covers. It is very light, easily and quickly adjusted to keep the charts in proper arrangement and uncrumpled, neat, straight and clean; it permits the insertion of additional sheets at any part of chart without disturbing the other sheets, and holds the sheets securely without perforating or marring the paper.

The cover serves to keep sheets clean and flat and at the same time prevents exposure of the records to those not entitled to their inspection. It takes up one-half the space occupied by the other chart holders, and makes it easier for the nurses to collect them in case they are kept at the bedsides. All who have seen the chart holder in use have remarked on the excellency of this device and have declared that it has filled a long felt want.

LOUIS J. FRANK,
Superintendent Beth Israel Hospital, New York.

# NITROUS OXIDE ANALGESIA IN OBSTETRICS

## Intermittent Administration to Meet Each Pain Is Preferable to Continuous Method—Enables Patient to Assist Throughout the Labor—No After Effects on Mother or Child

By E. I. McKESSON, M. D., Toledo, Ohio

NITROUS oxide analgesia is so unlike twilight sleep or anything suggesting sleep that had the word not been popularized with the public it would be better not to use even the term "*American* twilight sleep" to distinguish it from *Daemmerschlaf*.

There is no sleep or even sleepiness and no loss of memory in nitrous oxide analgesia. The mother knows and understands everything, which is essential in obtaining her cooperation. The dressings are undisturbed, no one is needed to restrain her, nor are quiet rooms needed, or a corps of trained assistants to carry out the simple technic.

When the second stage is begun, or before, if the pains are causing the patient much discomfort, the method is explained to her in somewhat the following manner, emphasizing that her assistance and labor will be essential, and that she shall always watch closely for the first sign of each contraction, as the cue for beginning inhalations:

Nitrous oxide is an odorless gas, which is capable of relieving pain when inhaled. Less than six inhalations does not produce sleep nor in the least impair memory, but will relieve the suffering of childbirth. More than six inhalations usually results in unconsciousness, or anesthesia, such as is used in surgical operations, and is not desired, as a rule, in normal cases.

The dose required to relieve suffering depends upon the character of the pain and is regulated by the number of inhalations of nitrous oxide directed to be taken. There is this difference between nitrous oxide and other drugs or methods for the relief of pain, that nitrous oxide will produce analgesia in less than 10 seconds, while other drugs require many minutes to hours to afford the desired relief. Again, after stopping the inhalations of nitrous oxide and breathing air, it is eliminated through the lungs within a minute, while other drugs require hours. Herein lies the secret of success of nitrous oxide in its application to obstetrics. It is the only agent known which may be administered at the beginning of each uterine contraction, absorbed with sufficient speed to relieve the suffering and again eliminated from the body before the next contraction is due.

It is evident that, to obtain relief, it is necessary that the inhalations must be begun promptly when the first symptom of the oncoming pain has been experienced. Also, the inhalations must be taken deeply into the lungs and quickly expelled until the required number (normally three) have been inhaled. The last breath of nitrous oxide inhaled should be held as long as possible while bearing down powerfully, so as to get the full benefit of the gas; and, at the same time while being relieved, to assist the uterus in expelling the child, making it slide a little every time.

As soon as air is again inhaled the analgesia begins to rapidly fade away, and by the time the contraction is over the analgesia is practically gone.

Analgesia does *not* relieve the woman of labor, and is not intended to. It does relieve pain, which makes it possible to work the harder through expulsive efforts at making the child slide through the birth canal. In fact, unless the mother labors and cooperates the progress of labor will be no faster than without analgesia; but with this assistance birth will take place in about half the usual time and without the usual suffering.

Particular attention will be required to see that the inhalations shall be started each time at the first sign of the oncoming pain or the analgesia will be a little late to relieve the pain completely. Again, care should be taken not to begin inhalations too soon, since the pain may come just as the analgesia is leaving. A few trials will soon teach when and how the inhalations are to be taken. "Just study it a little; it is harmless, and you will go through with no suffering after you learn the trick in the first two or three pains."

With these few explanatory remarks the patient usually becomes a close observer, and is not only interested in the relief it affords, but is occupied by the definite directions in assisting in the delivery of the child.

Nitrous oxide has probably been used millions of times by dentists for analgesia in the past few years without a case on record of any serious trouble. It is inconceivable that nitrous oxide in the stage of analgesia (where the patient is awake) should ever cause harm to either mother or child, with its record in dentistry, and since it is recognized as the safest of all anesthetics for Cæsarean section or other operations requiring unconsciousness. More than this, of the thousand

or more cases of obstetrics already conducted under analgesia none have been reported as unfavorable.

The apparatus required for analgesia may be very simple, indeed, it may be so small and automatic that it may be conveniently carried to the home with enough gas in two small tanks all ready for use to last for several hours. In normal cases a trained anesthetist is not required, since all that is needed is some one to apply the mask tightly over the nose and mouth while the patient inhales the number of breaths directed by the obstetrician, and then remove it. A large nitrous oxide-oxygen apparatus as ordinarily used for anesthesia may also be employed, although these often are not automatic and require experience in managing them.

There are different kinds of pains; some are slow in reaching their "peak," others are fast; some are weak and others are strong, but in the same patient, while the pains are somewhat variable from time to time, they usually retain about the same speed of onset. We are interested in the speed of onset and the duration of pains because we have to regulate our analgesia accordingly.

A fast pain requires fast analgesia. By diluting nitrous oxide with air its action is slowed, and the greater the dilution the slower the action. It is also weakened when more than 35 percent of air is mixed with it. So that a fast pain demands a purer or richer mixture of nitrous oxide (less air) to win the race with the pain than a slow one.

On the other hand, a fast analgesia used in a slow pain would be like the race of the hare and tortoise—the analgesia would fade away at about the climax of the pain.

Fortunately 10 percent of air fits most cases, and the others are easily controlled by changing the mixture one way or the other as the case may require.

In the last four or five pains before delivery the contractions may be very long, and the patient who, earlier in the second stage, had been taking three breaths of gas at a pain will now need the three breaths at the start, and the analgesia will need to be continued two or three times as long as before. The onset, however, will rarely change in speed. To prolong the analgesia after the first series of breaths have been inhaled, the mask is removed while the patient bears down. She then takes a breath of air, and is encouraged to bear down again. The mask is then reapplied for one breath of gas, removed for a breath of air, reapplied, etc., until the pain begins to fade.

When the head is to pass through the outlet it is usually best to administer about 10 inhalations, inducing anesthesia or unconsciousness, especially if there is danger of laceration, since analgesia will not relieve the pain of a perineal tear.

In delivering the placenta analgesia may again be used, while stitches should be placed during deep analgesia or light anesthesia, induced the same as just described.

Normal babies breathe and cry promptly after analgesia, showing no cyanosis or effects of the gas whatsoever.

It is *never* necessary to produce cyanosis in the mother, and even in Cæsarean section, eclampsia, or difficult forceps cases, where *nitrous oxide and oxygen* is always the indicated anesthetic, the baby, if uninjured, breathes promptly without the usual spanking, etc.

The cost of analgesia for obstetric cases is trifling—about 35 cents an hour, depending upon the frequency of the pains and the number of breaths taken at each pain; while the second stage, in a properly managed case, is shortened by analgesia.

The above is a description of the intermittent method, which is obviously so far superior to the continuous maintenance of analgesia between contractions when there is no pain to relieve, that no consideration will be given to the latter.

The inhaler covering both nose and mouth is always preferable to the nasal inhaler, since often the patient must breathe through the mouth to get the gas in large volumes quickly, which cannot be accomplished with even slight nasal obstructions which are commonly encountered.

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Miss Edith May Witman, until recently head clinic nurse of the Reading (Pa.) Homeopathic Hospital, is now in charge of the Pottstown Homeopathic Hospital, Pottstown, Pa. Miss Witman succeeds Miss Nora S. Huyett, who plans to take a post-graduate course at the Polyclinic Hospital, New York City, in the near future.

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Mercy Hospital, Hamilton, Ohio, has recently fitted up new quarters for its nurses in a commodious dwelling convenient to the hospital. The building was enlarged and renovated, providing ample and comfortable arrangements for both study and recreation. The features of the home include a domestic science kitchen, with all of the requisites for students to pursue a nurses' course in this branch of training. The separate housing of nurses enables the sisters to devote more space in the hospital building to patients, which increasing demands upon the institution have made imperative.

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Several changes have recently taken place at the Louisville City Hospital, Louisville, Ky. Miss Rose K. Golden, formerly superintendent of Mercy Hospital, Kansas City, Mo., has been appointed superintendent of nurses; Miss Flora E. Keen, of Somerset, Ky., has been made assistant superintendent of nurses; Miss Estelle Masterson, surgical supervisor; Miss Freda Payne, medical supervisor, and Miss Frances Conroy, night superintendent. The number of pupil nurses has been increased to eighty-two, including affiliated nurses from Waverly Hill Sanatorium.

The MODERN HOSPITAL

Editorial Office . . . . . Tower Building, Chicago
Business Office . . . Metropolitan Building, St. Louis

EDITORS.

Henry M. Hurd . . . . . Fidelity Building, Baltimore
Frederic A. Washburn . Mass. General Hospital, Boston
Winford H. Smith . . Johns Hopkins Hospital, Baltimore
S. S. Goldwater . . . . Mt. Sinai Hospital, New York
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Under domestic postage, $3.00; foreign postage, $3.50 (14 Shillings). Single copies 35 cents.

Domestic rates include United States, Cuba, Mexico, Porto Rico, Canal Zone, Hawaii and Philippines.

Contributors, subscribers, and readers will find important information on advertising page 34.

## Announcement of New Departments

Beginning with this number of THE MODERN HOSPITAL, two new departments are inaugurated, one on "Sanatoriums and Sanatorium Progress," to be conducted by Dr. Albert Warren Ferris, director of the New York State Reservation Commission in charge of the Saratoga Reservation; and a department of "Institution Libraries," to be conducted by Miss E. Kathleen Jones, librarian of McLean Hospital, Waverley, Mass., and secretary of the Institutional Library Committee of the American Library Association.

It will be remembered that the late Dr. Mumford, one of the editors of THE MODERN HOSPITAL, conducted a sanatorium department beginning with the inaugural number of THE MODERN HOSPITAL more than two years ago; his department had demonstrated its wide and great usefulness. Upon Dr. Mumford's death it was thought best to discontinue the department until it could be placed under proper editorial direction that would promise a continuance of the great good that Dr. Mumford had begun.

THE MODERN HOSPITAL and all its readers are to be congratulated that Dr. Ferris has consented to accept the responsibility of this department now. Dr. Ferris's splendid activities at Saratoga and the high ideals that he has brought to bear in creating that great American spa is a guarantee of the fine leadership that he can bring to bear in helping the sanatorium people of this country to better methods, better architecture, better equipment and a higher efficiency in their institutions.

A good many of our readers may wonder what a department under the head of "Institution Libraries" can mean; the question is answered by Miss Jones in the first instalment of her new department in other pages of this number; indeed, Miss Jones, in association with Miss Carey, librarian of the Minnesota State Institutions, and Mrs. Grace Myers, librarian at the Massachusetts General Hospital, has demonstrated the usefulness of such a department in the past several numbers of THE MODERN HOSPITAL, and it was because of such demonstration that the editors of THE MODERN HOSPITAL have concluded to inaugurate this department as a regular monthly feature.

It goes without saying that every institution should furnish its visiting medical staff and its house staff with proper scientific books for their study; it is also needless to propose that pupils in the training school and supervisors should have access to good books; we are now coming upon an era of higher class service to the sick in our hospitals, and entertainment, recreation and an attractive form of education are incidents in such service.

Some months ago the American Library Association, under the stimulus of Miss Carey, Miss Jones, and a number of associates, created the Institutional Library Committee, and these librarians, who have given an immense amount of study to their problems, seem now ready to accept leadership in this important subject.

THE MODERN HOSPITAL feels that institutional libraries are highly necessary, and it believes that even in the smallest and most modest hospital, general or special, some organized effort to bring good reading matter to the hospital family can be productive of great good.

## Some Sources of Friction in the Management of Hospitals

Much of the friction generated in the movements of the machinery of a hospital can be traced often to a faulty organization of the executive staff. There may be a lack of definite knowledge on the part of the governing board, whether known as trustees or managers, of their most serviceable functions. These are legislative and supervisory rather than executive. The members of every such governing board cannot, without detriment to the welfare of the hospital, undertake to perform executive duties. They must rather delegate them to a good executive officer,

and should concentrate in him the actual control of all departments.

To use a phrase found in the regulations of one hospital, the superintendent should be "the authorized means of communication between the board of trustees and the various officers and departments of the hospital." In this manner only is it possible to maintain a uniform, just and well-balanced control. It is the duty of the governing board, it is true, to initiate all legislation and to settle the policy of the hospital, but the superintendent must be clothed with power to carry the decrees of the board into effect if they are to be effectual.

A similar practice is necessary to insure success in governmental operations and in large business enterprises. How unwise it would be, for example, even if it were possible, for the directors of an extensive railway line to concern themselves in the selection of conductors, brakemen and section hands and in the minor details of repairs and reconstruction along the line! The directors are responsible above all other things for the achievement of results; and to secure them they are charged with the supreme duty of discovering a competent executive to carry their will into effect. They cannot attend to details, and should not.

In some instances a hospital trustee may become interested in a special department, and in the course of time come to be regarded as its special patron and foster-father. It is often natural under such circumstances that the head of this department should feel that an appeal may be made directly to him in the interests of the department, without the knowledge of other members of the board or the cognizance of the executive officer. Such mistaken methods inevitably give rise to friction and difficulty. Trustees should be managers equally of every department and should content themselves with marking out the lines of work required to be performed by their various appointees. They should make no mistake in the selection of a proper man for superintendent, but when selected he should be clothed with authority over the heads of all departments and should be upheld in the exercise of such authority. He should be the intermediary of the board throughout the hospital and the agent of the hospital in its relations with the board. The current of authority should flow through him from above, and the desires of the heads of the different departments should be expressed similarly through him to the managers.

In the experience of hospital experts grave difficulties arise when an attempt is made to manage a hospital through an executive or governing committee of medical men rather than through a single executive head. Many men have many minds, and these minds usually do not agree. All persons have not an equal talent for administration. One or two members of such a committee often have so much administrative talent as to be meddlesome, but the majority as a rule do not assert themselves sufficiently; the result is disorganization and inefficiency, or an irresponsible one-man power exercised for personal ends. Hospital managers should rather find a good executive head and commit to him the details of management. He should be clothed with adequate power and sustained in its exercise. Responsibility without authority is weakness. HENRY M. HURD.

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### A Beginning Upon the Problem of Better Medical Care for the Middle Class

The Trustees of the Massachusetts General Hospital have approved a plan submitted to them by the General Executive Committee of the Staff for a consultation clinic for people of small means.

It is a platitude that the rich and the poor are well cared for medically, while the middle class is obliged to content itself with inferior treatment. The problem, as it presented itself, was how to have the hospital serve the last named class and at the same time do no injustice to the practicing physicians of the community. The solution has been reached in the following plan, which will be inaugurated at the hospital in the near future:

In the out-patient department building, which now stands idle in the afternoon, a representative of each medical and surgical department of the hospital, who is willing to undertake this work, will be on hand Tuesday and Friday afternoons at two o'clock. To this clinic physicians will be invited to bring or send their patients for a diagnosis. The hospital will expect to receive patients from families whose incomes are small, and will trust to the physicians referring the patients not to send here those of considerable means.

The fee contemplated for this work is $5.00, with small extra charges for x-ray examinations and Wassermann and other tests. It is planned that the hospital shall retain from the fees the cost to it of conducting the clinic, and that the balance shall be divided among the physicians in proportion to the time and work which they have given.

It is hoped that as far as possible the physician will accompany his patient. If he does not do so, the hospital will communicate with him by letter, giving the diagnosis and outlining treatment.

It will be seen that for this one fee of small size the patient will receive the advantages of consultation in all the special departments which may

be needed for a diagnosis in his case. He will receive the aid of all the laboratories and skilled technic of a great center of medical knowledge.

Such is the scheme as it is outlined in our minds at the present time. It is a new departure and unlikely that we foresee in just which way it will develop, but that it is a step in the right direction we have no doubt. FREDERIC A. WASHBURN.

## Civil Service in Hospitals

THE MODERN HOSPITAL has been acutely concerned about political interference, especially in state and municipal institutions. We have done whatever we could, in season and out, to help divorce institutions for the care of the sick from petty, vicious politics.

No doubt civil service is a fine thing under certain circumstances, and there is no doubt whatever that its sponsors have a mind single to a higher service on the part of employees, and that they believe the civil service to be a potent factor in that behalf.

But the civil service has failed up to the present time to serve any good purpose in the hospitals of this country. So far as this present writer knows, the civil service has never protected an executive officer of a public hospital nor held him securely in his place against the machinations and conspiracies of petty politicians. It seems that a civil service superintendent is quite as easily removed from office as one who has been appointed through political influence; charges can always be preferred, and the politicians have a code of charges that can never be disproved when they wish to get rid of a troublesome executive or make a place for a political associate.

Then, too, the position of hospital executive is one requiring the highest order of tact, skill and diplomacy, beside a knowledge of hospital practice; and no civil service examination that was ever contrived is able to establish the supremacy of one candidate over another in these respects.

One may find out in the civil service how much each man and each woman applicant knows about the business done in hospitals, but no civil service examination can inform an examining board which applicant would be best fitted to handle the help, to get along with the public and to give the doctors what they need.

Up to date, civil service as applied in hospital administration is a political cloak, and until some scheme can be concocted whereby the best executive can be selected, and whereby he or she can be secure in the position attained in spite of political exigency, then civil service is a hypocrisy and a humbug.

## SOME ENGLISH HOSPITAL FOODS

### Special Preparations and the Technical Methods of Making Them in London Hospitals

A recent number of the London *Nursing Times* quotes the following from *The Daily Mail:*

Albumin Water.—A valuable light food when milk proves indigestible is prepared at King's Hospital as follows: Cut the raw white of one or two eggs in several directions. Put in a large bottle, add half a pint of cold water, and thoroughly shake. Flavor with a little cinnamon water. At St. George's Hospital three eggs are used for half a pint of water, and the mixture is flavored with sugar. At the Evelina Hospital salt is used instead of sugar.

Barley Water.—This may be best prepared as follows: Add two heaped-up tablespoonfuls of well-washed pearl barley to a pint of water. Simmer for half an hour. Strain and flavor with the juice of one lemon and five lumps of sugar. (Westminster Hospital.) Or, for infants, put two teaspoonfuls of washed pearl barley in a pint of water. Slowly boil down to two-thirds of a pint and strain. (King's Hospital.)

Whey.—Add two teaspoonfuls of liquid rennet to one pint of lukewarm fresh milk. Stir and leave until firmly clotted. Then break up the curd and strain through muslin. (Evelina Hospital.)

White Wine Whey.—Add two ounces (a small wineglass) of sherry to ten ounces (half pint) of milk. Heat nearly to boiling point. Allow to simmer until curd separates. Strain. Instead of sherry a tablespoonful of lemon juice may be used to make lemon whey. (King's Hospital.)

Artificial Human Milk for Delicate Infants.—This is prepared at Guy's Hospital according to the following directions: Add one drachm (a teaspoonful) of rennet essence to half a pint of skimmed milk. Warm to 96 degrees and place the vessel before the fire till the milk sets. Then break up the curd into small pieces, let stand for quarter of an hour; pour off the whey into a saucepan and boil it quickly. Take one-third of a pint of this whey and while it is still hot add quarter of an ounce best sugar. Let it cool, and when cold add two-thirds of a pint of new milk and two teaspoonfuls of cream. It should be prepared fresh every twelve hours.

Peptonized Milk.—Mix two-thirds of a pint of milk to one-third of a pint of water. Divide in two, boil one half and add it to the other cold half. Put into this one peptonizing powder (obtainable at the chemist's), mix, and keep in a warm place for ten minutes to a quarter of an hour. Bring to the boiling point. (St. Mary's Hospital.)

Peptonized Milk Gruel.—Make half a pint of gruel, and while boiling hot pour it into half a pint of cold milk. Add five grains extract of pancreas and fifteen grains bicarbonate of sodium. Keep in a covered vessel in a warm place for two hours. Boil for three minutes and strain. (Evelina Hospital.)

Raw Meat Juice.—Press thinly sliced beef in a meat press, or finely mince the meat, sprinkle with salt, add its own weight of cold water, let it steep for a few minutes and then strain by pressing through stout muslin wrung out of cold water. (St. Thomas's Hospital.)

Mutton, Veal, or Chicken Broth.—Prepare in the same way as beef tea.

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A small hospital for children is to be erected in connection with the Children's Home, Sioux Falls, S. D. The dimensions of the building, which is to consist of two full stories and basement, will be 34x26 feet. Each floor will be divided into two ward rooms, diet kitchen, bath and toilet. The second floor will be used for cases demanding strict isolation and is not to be connected in any way with the first floor, being accessible only through an outside door and stairway at one end of the building. The exterior construction will be of stone, and the total cost, including equipment, is estimated at $6,000.

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Miss Barbara E. Jacobson, for the last three years assistant superintendent at the York Hospital and Dispensary, York, Pa., has resigned to accept the superintendency of a hospital in Kentucky.

# HOSPITAL, MEDICAL *and* SPECIAL MEETINGS

## Possibilities of Future Development in the Service Rendered by a Hospital to a Community[1]

BY ANDREW R. WARNER,
Superintendent Lakeside Hospital, Cleveland.

Fundamentally hospitals are of one type of institutions created by society for service to society. Their existence implies a need for the service and their future growth depends upon the degree of usefulness that can be developed. Beyond and above a hospital's service to the individuals in its beds, to the medical profession, to the cause of medical education, and to the growth of human knowledge, stands that hospital's final, resultant, real service to society as the ultimate measure of excellence. It is the whole of which all of the many other functions of a hospital are parts—important, essential, but only parts. There is yet occasionally a hospital performing only the first elementary function of a hospital—the furnishing of bed and board to individual sick; but there are now many at the other end of the scale giving service which is the product of hands skilled in many ways, and the work of several professions—at least of the nursing, the medical, the ecclesiastic, and the sociologic professions. These hospitals can render the greatest service to society; it is these, therefore, that society will in the end elect to preserve and support.

In a single paper one cannot discuss all the possibilities of future development in the service rendered by such hospitals to society; there are too many of them and but few can be selected.

### PREVENTION OF DISEASE AND PUBLIC HEALTH

The era of prophylactic medicine is no longer a hope; it has come, a reality in fact, 'though it will develop in degree. The health centers that have been established, the more frequent routine of periodic physical examinations, the work of the factory physician and social service department, and the frequent use of the visiting nurse by insurance companies, indicates that individuals and corporations are becoming convinced that in days of health and productive labor it already pays better than its cost. There is now a general recognition that it is better charity to keep a man from the need of a hospital bed than to care for him when in one.

The composition of the average hospital ward is a public disgrace and a reproach. Here we find typhoids because they drink our sewerage; visceral and brain syphilis because doctors, dispensaries or hospitals have been too careless about letting patients slip away half cured, a menace to others and a prospective public burden; here is sometimes tuberculosis, but never chicken-pox, because the community calls chicken-pox contagious and isolates it, though as yet it does not isolate tuberculosis; here are men sick because they worked in a danger of which they knew nothing; here is a long line of men useless from the primary and secondary effects of alcohol. Hospitals see the needlessness, the ridiculousness of it all even better than others, and although it often means hard work to raise the money to pay the cost, they generally endure it in silence and with a degree of inaction that does not indicate patience or any other virtue.

If a factory begins to send to a hospital cases of lead poisoning or other industrial disease to fill the spare beds, there is a sacred duty, a trust, to be fulfilled: not to appeal to the trustees for more beds for these poor sufferers, but to tell the facts, all the facts, to the local authorities, to the state board, and to the public. What the authorities cannot do to force a correction of the faulty working conditions public opinion can, and it will be done. Then the extra beds will not be needed. It is not always a compliment to a hospital when some factories elect to patronize that hospital; and if a hospital's collective conscience and regard for duty can be kept dormant by the prompt payment of ward rates, it is thereby classified, if not standardized. The public has long talked about cemeteries as the burying ground for the results of medical incompetence, and the public is beginning to talk about the hospital record room as the burying ground for the responsibility for human lives carelessly, needlessly, wrongfully damaged or lost. A policy of silence, inaction, disregard toward industrial carelessness and other causes of needless suffering and death makes the hospital an accessory to the crime. The working conditions of some manufacturing plants are wrong entirely through ignorance and not with wilful carelessness. But this does not lessen—it increases, rather—the hospital's responsibility to make the effort to relieve the detrimental working conditions; for the hospital's story, told direct to the managers, will in such cases promptly bring the desired results.

The preservation of public health in all its forms is a major work for every hospital. No contribution of facts pertaining to public health problems can in any way equal that collected by hospitals. This is due to the fact that the records are written, that both the primary and secondary diagnosis are collected together in the indexes, and that large series are rapidly collected. The poor, the people reached best by hospitals, are affected first and most by community conditions unfavorable to health. The outpatient department, because of its numbers, is extremely sensitive to changing conditions. The diagnoses made in a day or a week are a fairly accurate picture of the state of the public health in the locality, a fact just beginning to be put to any use. We are the keepers of public health more than we sometimes realize. In these days cities have epidemics of small-pox only when some dispensary misses that first case from the crowded foreign settlement.

Dispensaries will not always be departments or adjuncts of hospitals—"poor relations," as they have been called. The public interest will follow the profession to the newer fields. Although the man with tuberculosis, brass poisoning, or typhoid will continue to get the most careful attention, the keen interest and the higher regard will be placed in the work of preventing others from getting the same troubles. The primary philanthropic institution will then be the one in the closest contact with the people, the dispensaries, and the one which writes daily in its records the danger signals and the forecasts of the health of the community, now so little considered. Financial support always follows interest. Around the dispensary will be grouped the acute wards, the convalescent hospital, the hospital farm, the departments to train the maimed and handicapped back to usefulness, and other departments. Such an institution will be equipped to mend the accident or misfortune in the best way possible at the

[1]Paper read before the Seventeenth Annual Conference of the American Hospital Association, San Francisco, June 22-25, 1915.

same time that it is promptly preventing more from the same source.

Sometimes even our routine work and records can be used quite effectively. When the Social Betterment Committee of the Federated Churches of Cleveland decided to attempt to secure the closing of the segregated vice district, the ministers counted the men and boys who visited this district, and asked what the harvest must be. The two hospital superintendents who were members of the committee counted the cases of disease coming to our clinics. We questioned every man as to the source of his infection and were soon able to demonstrate that 40 percent of the fresh infections with venereal disease was acquired in this small isolated vice district, although only 10 percent of the prostitutes, street walkers, and other habitually immoral women known to the police, were inmates of this district. We brought the mayor and chief of police of the city to our clinics, not to point out the wealth of our clinical material, but to show them the constant stream of needless human suffering that came from this district to overwhelm the offenders and the innocent of this and succeeding generations. We opened our hospital records to them that they might realize the aftermath. The result of it all was the addition to the plans of our City Hospital of a pavilion of one hundred and fifty beds for the isolation of the venereal diseases together with an increase in the beds now available, and recently, too recently to count our gain, the complete permanent closing of the district by a forceful, sincere mayor and an efficient chief of police, equally determined to rid Cleveland of all traces of commercialized vice. The crowding in our dermatological clinic will, I believe, soom become a little less troublesome.

The fields for service to public health and preventive medicine open to hospitals are as yet mostly possibilities for future development, but the proper use of our records and opportunities already promises to prevent more disease than our beds could possibly relieve with treatment. Incidentally the record room work gets results cheaper than the ward. Is the "*summum bonum*" the medical profession or is it public health?

### THE BROADER FIELD

The present also reveals to us the beginnings of a recognition of our broader responsibility to a patient. Usefulness is the measure of life and life's happiness. It may be lessened or abolished by disease and thereby bring not only dire misfortune to the individual, but a problem to society. Such a problem begins when full usefulness ends; it is solved only when usefulness is again restored. To hospitals society assigns the solving of these problems when the individual's resources are inadequate. The limits of the hospital field are therefore from the ending of usefulness to the restoration of usefulness. Social service, as we now know it, is but the beginning of the reorganization of hospitals to assume the full responsibility for the assigned problem and a promise of farther development, not a finished product. The hospital social service worker recognizes these broader limits of the hospital field in the daily task of getting someone a job and back to work, to normal life. The interval between the discharge from the hospital after an acute illness and the day the man can return to work is usually a dangerous risk at least, if not a serious damage, to a workingman. Supervision of convalescence saves many chronic conditions, many over-strains, and many lives, and it is inevitable that at some time it will become general. Hospitals must make the use of convalescent departments a routine. The longer stay in the wards at high cost cannot compare in value with the far cheaper and better farm life, the open air, the sunshine, and the graded schedule of work in the garden to bring a man back to working condition. This and much more will come when the hospital's work ends, not when the patient is "able to go home," but when he is "fit to go to work." The responsibility to furnish the most effective and the broadest service cannot now be abrogated by any hospital; it can only be ignored.

### RESEARCH AND EDUCATIONAL

In the last few decades many medical schools have established chairs of experimental medicine and have provided ample laboratory facilities for border-line work with good and sufficient results. Notwithstanding the work of these university research posts, there has come to hospitals a feeling of direct responsibility to increase the store and use of medical knowledge by actively encouraging, instead of passively permitting, the study of problems presented by its patients. Animal experiments done in hospitals, and laboratory work, to prove and to check the theories, explanations, and observations of the staff, are becoming more common. It is in the hospitals that the practical clinical problems actually present themselves, and there is a growing belief that it is in the hospital that most of these, by a shrewd guess, or keen logic, will not only be solved for the day, but will be so proven by animal experiments and other means that the work will reach and be of value to others and a benefit to posterity.

There is another benefit from the cost of experimental work, often, if not always, worth more than the knowledge gained. Hospitals are becoming progressively more and more interested in the training of young medical men for their own future use and for others. Without experimental work these young men are trained to depend on the say of others; with it they are trained to think and to prove. Surely the latter will produce better men. To the local dwellers a hospital is a building of brick or stone, for the care of the sick; to the world, to society, it is a group of men of a certain caliber, bringing forth results of a certain worth. It pays to train men right. Lakeside has recently backed this belief by adding five men to the resident staff and equipping a new laboratory, in order that thoughtful observation, study, and demonstration, or "research work," as it is often called, may be increased among them to the extent of five men's full time. By no means does this make our hospital the leader in this particular, but rather a follower in a line that is content to look to the future for even moderate results. The clinical clerk is another evidence that hospitals are taking an active interest in medical education.

### COOPERATION AND MUTUAL HELPFULNESS

The idea of mutual cooperation between hospitals, as it is developing, is hopeful and prophetic. The very idea of active competition between hospitals, of a bitterness of feeling, and of any rivalry that is not absolutely free from thought of gain to self, and due simply to altruistic eagerness to serve better, is repulsive; it is entirely foreign to the purpose of all endowments, grants, or expressed tenets of purpose of any hospital. The public servant, institutional or individual, that reveals for an instant a selfish aim is instantly discredited. Honor and gratefulness are but the acknowledgment of debt for uncompensated service. The union of hospitals to increase the ultimate service to the community is broadening in scope. New York hospitals have united to lessen waste in buying. Philadelphia hospitals have united in an effort to increase the individual efficiency of the institutions. The New York dispensaries have united for the primary purpose of increasing the com-

bined contribution of all the local institutions to the public welfare of the community, helping each to fit its work to the others and to the existing needs, eliminating overlapping and wasted energy. The Cleveland hospitals have done the same thing. Surely we may look forward to the day when all hospitals shall present to society harmonious, united service, adapted to the needs of the time in absolute unselfishness and with the greatest care.

### REAL RESULTS

What are days and weeks spent in a hospital worth to patients, and what do the "cured" and the "improved" in the discharge notes of medical and surgical histories mean? Dr. Codman, of Boston, has been asking these questions for some years. A few hospitals are now really trying to find out by thorough follow-up systems how beneficial the average "cure" proves to be, and to appreciate the later influence and the final effect of particular treatments. We are entering on the stage of the collection of the actual results as fundamental facts. From these there will come comparisons, deductions, lessons learned, and, based upon these, future progress in many ways. Known results can be compared with the cost—one method with another; and society will be able to buy its health more intelligently.

Many who have thought about the growth and development of the medical sciences, the shifting of the professional aim from treatment alone to individual prophylaxis, and the expansion of prophylaxis to the community, and who have then realized that this was simply intensified public health work, have reasoned from this conclusion, and from the growing recognition that all is for service to society, that in the end the medical profession and all institutions contributing to the preservation of health "must become a function of the state." But society has other professions and other institutions existing to protect and advance itself, and the same principles of greater, broader service pervade many such. All that render good service cannot become "functions of the state," as we now understand that term. There would be nothing to do worth the while outside the state. Such a condition can be only when state and society become synonyms, when statecraft and the science of society are one. This may come, but it will come through the socialization of the state and its elevation almost to perfection in grasping and enacting a wiser public will, and not by the extension of political control of the present type to and over the professions and institutions. Active participation by the profession and by hospitals in the solution of public health problems and the acknowledgment that the logical test of excellence is the ultimate value of the service to society will bring no crisis, no conflict with the state. Ideals and service will guarantee respect and position tomorrow just as they do today.

## Illumination of a Modern Hospital[1]

BY DAVID CROWNFIELD,
Boston.

The artificial illumination of a hospital is probably as complex a problem as may be presented for solution to those to whom the handling of such matters is a matter of daily practice.

When I promised the late Dr. Mann that I would prepare a paper on the subject for delivery at this convention, I had, it is true, some idea of the almost limitlessness of it, but I did not, perhaps, realize fully how limited was the time that could be assigned to so far-reaching a subject in a convention where so many subjects are legitimately pressing for presentation.

The interplay of physics, physiology, psychology, and last, but not least, of economics, is constant. The presentation of any one of these aspects of the problem is a subject in itself. The field of research is as yet almost untouched; of data on the subject there is almost none whatever; and consultation with those using artificial light in hospitals often produces diametrically opposite expressions of opinion on the subject of what they consider good light in a hospital, or in some of its highly specialized parts.

On the building of a new hospital a recent article has this to say:

"In considering material and equipment for a new building, emphasis should be laid upon the fact that the use of cheap materials and equipment involves always high maintenance cost and often irremediable dissatisfaction. Extreme care should be exercised that only those materials should be used which will exactly fill all requirements and prove durable. This should apply to every detail of the building and its equipment. Better sacrifice in amount than in quality."

Of all the factors entering into the construction and equipment of a modern hospital, to none are these words more applicable than to the artificial lighting equipment installed in the building.

It is probable that in no other class of building extant, in the last two decades, has *the relation of the architectural members*, such as floors, walls, ceilings, trim, etc., to the use of the building in which they are placed, undergone so rapid an advance in fitness as have these several parts in the modern hospital building, where it has been built along advanced modern lines. It has been a battle between the right angle and the quarter circle, in which the latter has won out. This tendency has only recently begun to show itself in lighting fixtures, and is one of the points that should be looked for in the selection of a modern lighting equipment. Together with all other things, the lighting equipment should show fitness for the place in which it is to be used.

### INAPPROPRIATENESS IN FIXTURES

In a recently completed hospital, the fixtures installed in some of the main rooms were square in section throughout their various parts or members, and these fixtures were fitted with shades with V-shaped indentations on their surface. The fixtures and shades were wholly inappropriate for the building in which they were placed.

In another building, finished within a year, the writer was assured that modern, up-to-date lighting fixtures had been selected. On inspection these were found to be ordinary fixtures, suitable in part for a private house, or in some cases for an office building. They bore no relation to and possessed no fitness whatever for the otherwise highly specialized building in which they were placed; and this was supposed to be the last word in a building of its type.

In quite a number of recent hospital installations, open top inverted bowls have been installed. No more facile method could possibly be devised for the collection of dust on the fixtures not in use, or for the dissemination of dust, or germ-laden dust, by ascending hot air currents, when the fixture is lighted. A flat glass cover over the bowl is not quite, but almost, as bad. It may be taken as an axiom that no suspended bowl either of glass or any other material, or any shade of any kind whatsoever, with an open top towards the ceiling, should ever be used in a hospital, as it is a direct contravention of all those principles towards which we should constantly aim.

[1]Read before the Seventeenth Annual Conference of the American Hospital Association, San Francisco, June 22-25, 1915.

The principal enemies of a good lighting system are the cost-per-cubic-foot and the cost-per-bed methods of computing the cost of a hospital. The principal factors to be considered in our problem are, efficiency vs. economy and fitness vs. economy.

And while economy has always to be considered in any undertaking, it should never be permitted to dominate the selection of lighting fixtures any more than it would be permitted to qualify the judgment of a physician or surgeon in the selection of other instruments he uses in the practice of his profession. As a hospital is supposedly a concentration at one point of all those things that make for the saving of human life, it goes without argument that the lighting fixtures should have not only fitness for the building, but should also be peculiarly fitted for the particular spaces in which they are used.

### FITNESS VS. ECONOMY

Economy in lighting fixtures can best be achieved through standardization and repetition, but these are primarily permissible only in the structural parts of the fixtures and in the repetition of those structural parts throughout the various types of fixtures required for different needs. The constant repetition of a few individual types only throughout the building or group of buildings will give very poor results; such a fixture layout would be thoroughly lacking in fitness to accomplish the varied purposes of the installation.

### GROUPING OF ROOMS AND FIXTURES

The primary step in the artificial illumination of a hospital is the division of the rooms into groups, including within each group such rooms as will permit of similarity of treatment in the lighting fixtures and in the disposition of the light. We may further subdivide each group and assign to the various rooms special treatment if the means are at hand to warrant it.

The natural grouping upon the most economic basis would be: porches and vestibules; corridors, lobbies, and solariums; administration and connecting public rooms; examination and orthopedic rooms; operating and delivery rooms; service and other working rooms; wards of all kinds; help of all kinds; closets and small spaces; and fixtures for the machinery and power rooms and similar spaces in the basement. The assignment of all spaces strictly to some one of these groups should take place only where rigid economy is essential.

A better working and more practical layout of the rooms and spaces would be according to the following groups:

The exterior fixtures: the vestibules; the first floor entrance lobby and main corridor, and lecture rooms; all other corridors; small passages; and the office and reception and other principal rooms that generally lie to right and left of the principal entrance. The superintendent's room; the matron's room; diet and other kitchen and serving rooms; major and minor operating rooms and amphitheater; autopsy and delivery rooms; large wards and isolated rooms; small wards; private rooms; door call signal lights outside of private rooms and small wards; rooms in service portion; spaces in machinery and similar parts of the building.

### METHOD OF PROCEDURE

The usual course of procedure in laying out a lighting scheme is to plat in some convenient spot on the plans, figure out and indicate a quantity of light that will light the room, and finally to select a fixture which will fit these conditions, and perhaps by some happy chance bear some relation to the room in which it is placed.

In a hospital building the exact reverse of this course should be followed. As the rooms and spaces are almost invariably designated for some special purpose, we should first select a lighting fixture that will meet and further the accomplishment of that purpose, next we should compute the amount of light or current necessary to do what work is to be done, and lastly we should plat the outlet where it is intended to use the light.

As an instance of the merit of this method we can say that the best method of lighting operating rooms has been arrived at by this course of procedure. It indicates a distinct line along which advance can be made in the perfection of the types of fixtures used.

In contrast with the development of a model type of fixture, the computation of the quantity of light required and of the location of the outlet to carry the fixture are quite simple subordinate problems.

### TYPES OF FIXTURES

The fixtures to be used in a hospital may be of the direct, semi-indirect, or indirect type. We are using the terms as only applicable to the fixtures suspended from the ceilings. By direct fixtures are meant those with downward directed shades, which are usually suspended from the lowest point of the fixture. Advisedly these should not be too close to the ceiling, or very little reflection therefrom will take place. Neither should they be hung less than seven feet from the floor.

By semi-indirect fixtures are meant those in which the lamp is suspended in a glass diffusing bowl, through which part of the light is transmitted and diffused while part of the light goes to the ceiling, and is reflected therefrom around the room. This type of fixture should never be used without a glass dust cover over the bowl, which should not be flat.

By indirect fixtures are meant those in which the lamp is suspended in an opaque bowl with a highly polished reflector on the inside. If the reflector is properly designed it will reflect about 80 percent of the total or spherical candle power of the lamp against the ceiling, where it will be re-reflected around the room. Fixtures of the indirect bowl type should also never be used without a glass dust cover, which should not be flat.

Indirect fixtures are best fitted for entrances, lobbies, main corridors, offices, and lecture halls other than amphitheaters.

Semi-indirect fixtures are best fitted for large and small wards and private rooms. They are also the best, in an especially designated type, in operating, autopsy and delivery rooms.

Direct fixtures are best fitted for all rooms other than the above mentioned, where through reasons of economy it is not permissible to go above certain cost figures. When used in rooms where any continuous work takes place they should usually be hung at such a height that they do not come within the direct line of vision.

There is another type of direct lighting in which the lamp is enclosed in spherical or elongated globe. This may be called the direct diffused system. It is not an economical method, as considerable of the efficiency of the lamp is absorbed in the globe; but on the other hand it diffuses the light in all directions, and as the distribution of light from a tungsten filament is in section something like the shape of a butterfly, this method supplements the light in the dark places. This is its chief virtue, together with the fact that under the diffused light which it gives, pupillary contraction almost never takes place. If sufficient quantity of light is not thrown upon a given point, eye strain will occur from straining to see.

The difference between the three methods lies in their

effect upon the organs of sight. Under the direct method, with an open downward reflecting shade a relatively strong zone of light is produced directly beneath the shade. If this light falls upon a polished, white, or reflecting surface, or if any rays directly reflected come within the range of vision, eye fatigue ensues, and pupillary contraction takes place. The result of pupillary contraction is to compel a given amount of work to be done by a smaller portion of the retina than usual, which results in excessive eye fatigue and consequent strain.

Is it possible, it may be asked, to light a hospital throughout satisfactorily by any one of these methods alone? It would require expert knowledge to do so. Only a few of the factors which would have to be taken into account in a lighting scheme are known, such as the strength or quality of light gathered at one or more points, its brilliancy, and its color; the surroundings or environment in which the light is used, and their color; the surface on which the light falls, either dull or semi-glazed; the presence of color in the room; the presence of shadow-casting objects as rest spaces for the eye.

If direct fixtures are used in wards and one-bed private rooms, they should be kept out of the range of vision of the patient. The same is true of semi-indirect fixtures, unless a transmitting glass is used which will modify the color quality of the light. Indirect opaque bowl fixtures can not be used in wards and private rooms unless the quantity of light is kept low in candle power so that the intrinsic brilliancy of the walls, and particularly of the ceiling, is kept low. Highly lighted ceilings would be very annoying to a patient.

Accepting without discussion the theory that the rods and cones in the eye transmit to the cerebral centers the sensations of light and color, that the rods respond to form and to white, gray or low light, and that the cones respond to color, it behooves us to select such glassware that both the rods and cones will divide the work to be done between them. This is particularly important for those rooms where patients are and where the cost of fixtures that will give both the sensation of white and of colored light is an item to be considered. There are to be had at the present time two types of glassware whose modifying tendencies are in the proper direction. One of these types is a mixture containing opal. In the manufacture of this type the glass shades are made in moulds under forced pressure, which drives the small particles of opal evenly throughout the mixture, where they are caught and held by the cooling glass. The result is a glass of semi-transparent quality with high transmitting properties and of a slightly greenish-yellow color. The so-called Velleria, Druid and Alba glass, is of this type. Its virtue lies in the fact that the greatest sensibility of the organs of sight at ordinary intensities lies somewhere in the greenish-yellow, and in so far as this kind of glass modifies the white light of the tungsten and still whiter light of the nitrogen filled lamp, it aids vision without causing eye-strain or fatigue.

There is still another kind of glass which is made by the plating process. Its structure can be seen by examining its edge, which shows an inner layer of clear glass, a middle layer of opalescent glass of a slightly greenish-yellow color, and an outer layer of clear glass whose outer surface has through acid action been given a satin finish. When a lighting fixture fitted with this glass comes within the range of vision, the center of the shade, through which the light passes directly to the eye, partakes of the greenish-yellow tone, while the outer surface of the globe partakes more of the quality of opal and inclines to a grayish-white in value. We have then an effect of slight color in the center of the shade, while its outer edges, which come into conjunction with the form or shape, are grayish-white.

In the case of this glass the rods and cones of our visual apparatus are both actively employed and eye strain and fatigue do not ensue.

### EXTERIOR AND VESTIBULES

The exterior fixtures should be simple in design, with the light enclosed in a globe, since such a globe will disperse the light much better than a hemisphere. The same is true of the vestibule.

### HALLS, LOBBY AND ADJOINING ROOMS

The entrance hall, and possibly the lobby, the adjoining corridor, the offices, reception rooms and other purely administrative rooms should each be lighted by a single indirect fixture of bowl type with light hung perpendicular to the ceiling. The bowl should have a properly shaped dust cover. The quality of the light required in each place can easily be obtained by adapting the size of the lamp to the requirements of the situation. Indirect fixtures are also the best for use in lecture rooms. Indirect fixtures with more than one light should be avoided, since multiple light fixtures of this kind require a bowl of considerable diameter, which acts as a large-surface depository for dirt.

Indirect fixtures are the best for the rooms and spaces just mentioned because, if properly installed, they will disseminate the light evenly over any space where it may be desired. For certain purposes they are the most scientific fixtures in existence today.

### SMALL CORRIDORS AND PASSAGES

Small corridors and passages throughout the building may be lighted more economically, as far as the first cost is concerned, by direct fixtures with proper shades to disperse the light over the required areas.

### ISOLATION AND EXAMINATION ROOMS

Isolation and examination rooms can best be lighted by direct fixtures, with downward reflecting open shades and lamps of sufficiently high candle-power to give a powerful concentrated light. The same is true of diet and other kitchens.

### OPERATING ROOMS

Operating rooms have been lighted in an infinite number of ways: by a single light, direct type, pendant, placed directly over the table; by multiple light concentrating reflectors, placed within a single shade over the table (and this type is the least suited of any, as it is a powerful temperature raiser); by a circular ring of lights placed sometimes on the ceiling, and sometimes on a pendant ring, with the shades set at angles which concentrate the light in the center of the operating table; and by means of an adjustable crane having a cluster of lights at the end of the crane arm, which can be swung from over the patient and adjusted outwardly from its support and up and down by means of a worm. The best method of lighting an operating room is by means of four pendant lights, hung at the four corners of a rectangle approximately 6x7 feet, with the short sides parallel to the window which lights the operating table by daylight, and with the center of the rectangle directly over the table.

One of the best pendants of this type has a lower glass diffusing bowl, on which is superimposed a glass dust cover. Above this is an adjustable deflecting shade, which permits regulation of the light to be concentrated on the operating table. These fixtures are adjustable and concentrating, diffusing, yet powerful, and are not over the

patient and so do not endanger the success of an operation, either from heat or dust particles.

### DELIVERY ROOM

The delivery room can best be lighted by the fixture I have just described, as its adjustable mechanism permits the directing of the light wherever it is desired.

### AMPHITHEATER

Amphitheaters and class demonstration and operating rooms should also be lighted in the manner just described. In these rooms the long side of the rectangle from the four corners of which the fixtures are hung should be at right angles to a line drawn through the operating table and the center of the amphitheater.

Autopsy rooms should be lighted in the same manner, and with the same type of fixtures recommended for operating rooms.

### LARGE AND SMALL ROOMS

Wards should be lighted by pendant fixtures of the semi-indirect type with translucent bowls of glass, possessing the qualities previously referred to under the subject of glass. These bowls should have glass covers and should be supported by a center stem and not by chains. It would be a good thing if wards could be fitted with a system of dimmers, as anyone at all familiar with conditions as they occur in wards knows that there are times when very much more light is required than at others. In all wards there should be a portable light beside each bed, and this should be of such design that it can be hung on the wall or can stand on a table.

### PRIVATE ROOMS

The writer once asked a patient in a private room where he thought the light should be placed in the room. "Under the bed," was the instant response, "where it can be buried or reached if desired." Private rooms, being really wards on a small scale, require similar treatment, with the same type of center pendant fixture and an interchangeable, standing and hanging portable lamp beside the bed. The center fixture should be of smaller scale than the regular ward fixture.

### DOOR LIGHTS

Red and green signal call lights should be placed outside of the doors of private rooms. A new fixture of this type has a diaphragm between the two colored lamps, which excludes the possibility of both lamps appearing to burn while only one is really doing so. This is an improvement, as it obviates the possibility of the doctor and nurse both being called when in reality only one lamp has been turned on.

All other rooms in hospitals for economical reasons should be lighted by pendant fixtures, with downward opening shades, with bowl frosted electric lamps, or with brackets with similar shades.

### QUANTITY OF LIGHT TO BE ASSIGNED, AND ITS CONTROL

The problem of the quantity of light to be assigned to the various rooms in a hospital is a complex one. It depends not only upon the use the rooms may be put to, but upon the classification of the hospital, whether general, contagious, for incurables, for the insane, for children, or for other purposes.

### THE LOBBIES

Main corridors, offices, and reception and examination rooms should be well lighted with an assignment of at least one watt per square foot of superficial floor space, this computation, like all those that follow, being based on the power of tungsten filament lamps. Small corridors and passages do not require over a half a watt per square foot of floor area. Officers' or nurses' living quarters and service living quarters do not require over a quarter of a watt per square foot of floor area. The same is true of bathroom and toilet rooms. Orthopedic and delivery rooms require an assignment of two watts per square foot, as do lecture rooms.

Operating rooms may be reduced to a supposed field of 12x15 feet, which should be treated with four units of fixtures, each with a capacity of 300 watts. Such an arrangement, with the proper fixtures, will deliver on the field of operations 14 foot-candles, which is sufficient for the performance of any operation.

There are on the market single unit fixtures, delivering 40 foot-candles on the table. The consumption of visual pigment under such a fixture is such that seeing efficiency falls off very rapidly, and the added candle power is a detriment and not an aid in the performance of the operation. Furthermore, fixtures of this kind raise the temperature directly beneath them from 12° to 20° Fahrenheit, on the harmful effects of which, in some operations, it is not necessary to dwell here.

### LOCATION OF OUTLETS

In the location of outlets we have to take into account a purely physical factor resulting from the way lamps are constructed, viz.: The angles within which shades deliver their maximum efficiency or amount of light. It is upon this efficient angle that proper light distributing shades are constructed.

Outlets in the corridors and passages should not be farther apart than twice the width of the corridors. In reception rooms and offices the outlets should be centered so that they form squares not exceeding 16 feet on a side. The same is true of all rooms other than operating rooms; these should be placed at the four corners of a rectangle approximately 6 feet by 7 feet on its sides.

Delivery rooms should be divided into squares with a light in the center of each square, which generally should not be more than ten feet on a side.

The same is true of autopsy rooms. It is not possible here to more than touch on this subject.

This paper is intended to suggest lines along which studies can be made of a very important subject by those who are also in direct connection with the problem.

With regard to lighting schemes already extant in hospitals, I would suggest the following as a line of examination:

1. Is the lighting efficient?
2. Is it scientific and fitted with scientific glassware?
3. Is it so planned as to fixtures, layout of outlets and quantity of current consumed that it is economical?
4. Are the fixtures such that it is possible for the hospital to do its best work?
5. Are the physicians and surgeons satisfied with the artificial light under which they are carrying on their practice?
6. Has the hospital spent sufficient money for its lighting layout to be at its best for everyone, physically, physiologically and economically?
7. Does the hospital keep records or data of the efficiency of its lighting system, as far as the physicians, surgeons, house force and patients are concerned?

It probably does keep such data regarding other factors affecting its patients; and it seems advisable that lighting efficiency data should also be kept in order that the science of artificially lighting the hospital may keep pace with the progress of all other departments.

# CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
*Army Medical Museum and Library, Office of the Surgeon-General United States Army.*

**Clinical Records.** Eugene S. Kilgore. Cal. State Jour. of Med., 1915, XIII, No. 11.

The form for history and physical examination found satisfactory and useful in teaching and standardizing the clinical records of the University of California is outlined in detail.

**Inebriate Hospitals.** T. D. Crothers, M. D. Med. Record, 1915, LXXXVIII, No. 21.

The work now being done toward prevention and cure of inebriety and alcoholism in a few special hospitals in the United States is finally along rational scientific lines. There is without doubt a real need for more institutions of this class properly organized to give psychical as well as physical and medical treatment. Dr. Crothers is certain that more than a hundred such hospitals could be added to this field and be kept constantly filled to overflowing.

**A Grave Hospital Question.** Ed. N. Y. Med. Jour., 1915, CII, No. 21.

The reported proposals in the budget of the Board of Estimate to combine the Seaview Tuberculosis Hospital and the county almshouse is stigmatized as unnatural, unsanitary and a wild leap in the dark. No one should question the statement that "the vision of a fine hospital in disorder, of the sick untreated, of the pauper and decrepid gathered together with disease; the whole system of hospital work, research, finance and management depleted of labor and proper medical service, is not a vision of the scientific economist."

**Sanatory Agricultural Colonies in France** (Colonie agricole sanitarie in Francia). Ospedale Maggiore, Milano, 1915, III, No. 7.

Agricultural colonies have been established at Touay for the treatment of persons predisposed to tuberculosis and especially of soldiers who have been temporarily discharged from the army. These colonies differ from a sanatorium in so far as the patients perform agricultural work under the supervision of physicians. Besides cultivating gardens, raising fruit, flowers, etc., the patients receive thorough instruction concerning the dangers of alcoholism and the prevention of tuberculosis.

**Floating Sanatoriums** (Schwimmende Sanatorien). Deutsche Krankenpfl.-Zeitung, Berlin, 1915, XVIII, No. 18.

On account of the great number of soldiers afflicted with mental and nervous disorders due to the war the Russian cities have asked the Psychiatric Commission in Petrograd to devise ways and means for the treatment of these patients. One plan proposes to provide for a number of ships, which should carry these patients for weeks up and down the rivers and along the coasts of Russia. Such an open-air treatment is considered the best means for a cure of these disorders. A number of ships have already been chartered, and the cities have raised 80,000 rubles for this purpose.

**The Manufacture of Aseptic Hospital Furniture.** J. Lionel Stretton. British Med. Jour., 1915, No. 2861.

Dr. Stretton urges more cooperation between the surgeons and manufacturers to arrive at a "perfect article" in hospital furniture. In comparing the enamel burnt on metal and the enamel on wood he much prefers the latter, and adds, "I have never seen a piece of enameled metal furniture which has not chipped in a few weeks, and most of it is bespeckled before a year has passed. The enamel on wooden furniture never chips." The doctor prefers wood because "wooden furniture is far lighter for moving about; it is strong enough for its purpose, and the cost is less than half that of the metal."

**Organization of Specialty Services in the Territorial Hospitals** (Organisation de services de spécialités dans les hôpitaux du territoire). Caducée, Paris, 1915, XVI, No. 2.

The medical department of the French army has organized special services in neurology, ophthalmology, oto-rhino-laryngology, orthopedics, urology and psychiatry for each army corps. A physician-in-chief is at the head of each of these services; it is his duty to visit all the hospitals in his territory and to select all the patients which he considers need treatment in his specialty. These patients are treated either at the hospital where they are or are transferred to a centrally located hospital, where a division of the respective specialty is conducted.

**Prevention of Typhus Infection in Hospitals** (Zur Verhütung der Flecktyphus-Ansteckung in den Krankenhäusern). Dr. Pecirka. Zeitschr. f. Krankenanst., Leipzig, 1915, XI, No. 35.

Typhus fever is transmitted by the body louse (Pediculus vestimenti). The parasite, after biting its host, pours the contents of its mouth glands into the wound in order to irritate the tissues and thus produce a more abundant flow of blood to the parts. Dr. Pecirka found that small doses of quinine (2 grammes) taken daily produce such a change in the blood that its taste is not palatable to the insect. The parasite is thus prevented from pouring the contents of its glands, which contain the germs of the disease, into the wound. This new method of prevention was tried in the prisoners' camp at Mauthausen and proved eminently successful.

**The Forest Sanatoriums and Forest School at Elberfeld** (Die Walderholungsstätten und Waldschule zu Elberfeld). By E. Sprungmann. Tuberculosis, Leipzig, 1915, XIV, No. 6.

In 1905 the city of Elberfeld, the great industrial center of Germany, established a sanatorium for tubercular patients in the extensive public pine woods near the city. A large pavilion was erected in these pine woods. In summer time the patients gather at 8 o'clock in the morning at the Steinbeck railway station, whence they are carried by rail to the sanatorium, where they are at once given breakfast. A second breakfast is served at half past ten and a substantial dinner at half past twelve o'clock. At four o'clock they receive lunch, and at 7 P. M., before they return to the city, another substantial meal is served. This sanatorium was established only for men, but it proved such a great success that in 1906 another similar sanatorium was established for female patients.

In 1907 a school for weakly children was established in the same pine forest. The children stay all summer at

this establishment. They receive their instruction in the open air, and during the night sleep in two large open-air halls. During the last eight years no less than 1,430 were received at this open-air school.

**The Archduke Rainer Military Hospital** (Das k. k. Erzherzog Rainer-Militärhospital). Militärarzt, Wien, 1915, XLIX, No. 23.

A large military hospital, whose erection was begun two years ago, has just been completed. This new hospital is situated in the suburbs of Vienna and comprises an area of 44,000 square meters, 7,000 square meters of which are taken up by the buildings. From the one-story entrance building at the southern end of the grounds a wide street leads through a beautiful park to the main front of the hospital. This front forms a convex arch and is 802 meters long. It contains three large five-story pavilions, which are connected by two large three-story buildings, containing spacious open halls for open-air treatment. The central pavilion contains the administrative offices, a lecture hall, a pharmacy and rooms for physicians and nurses. The western pavilion receives patients with internal diseases, the eastern is intended for external diseases (skin, sexual, eye, ear, and nose diseases). In the large park behind the main row of buildings is the great four-story surgical pavilion. Two corridors, which are open in summer, but which can be closed and heated in winter, connect the surgical pavilion with the administrative building. The northern park contains also a chapel, an isolation pavilion and other minor buildings. At present the hospital has room for 500 soldiers and 25 officers.

**Clinical Teaching.** M. Schulman, M. D. N. Y. Med. Jour., 1915, CII, No. 20.

The Board of Managers of the Vanderbilt Clinic, presided over by the Dean of the College of Physicians and Surgeons of Columbia University, gave Dr. Schulman the permission in October, 1911, to organize a district service in connection with the clinic. This was organized to offer medical care in the patient's home and thus give the fourth-year classes material for study to supplement instruction given in the hospital wards, clinic rooms and amphitheaters. Students are reported to have taken to the work with enthusiasm during the past three years. Patients that would otherwise have had no care or at best sporadic and unsatisfactory treatment have received careful and prolonged medical attention. Briefly the work has proven not only interesting and instructive, but extremely useful to the district.

**The Admission of Indigent Patients to the University Hospital, Ann Arbor, Mich.** Reuben Pederson, M. D. Jour. Mich. State Med. Soc., 1915, XIV, No. 11.

Michigan was probably the first state in the union to place on its statute books "An act to provide for the medical and surgical treatment of children who are afflicted with a curable malady or deformity and whose parents are unable to provide proper treatment, providing for expense thereof and prescribing the jurisdiction of the probate court in such cases." This bill was passed in 1913 and has served as a model for other states. That the act passed this year is broader in scope is evident from the title of the bill: "An act to provide free hospital service and medical and surgical treatment for persons afflicted with a malady or deformity which can be benefited by hospital treatment, who are unable to pay for such care and treatment, and for pregnant women unable to pay for such care and treatment, and for children of such pregnant women born during the period of hospital care, and providing for the expense thereof and prescribing the jurisdiction of the probate court in said cases." Dr. Pederson, of the University Hospital, Ann Arbor, commenting on what the old law has done for afflicted children of Michigan, states that seven hundred have been referred to the hospital during the last two years. Referring to the new act, the doctor is confident that this law will be productive of equally good results and assures the probate judges of Michigan that the hospital authorities stand ready to cooperate at all times.

**Legislation for the Insane in Massachusetts, with Particular Reference to the Voluntary Admission and Temporary Care Laws.** Frankwood E. Williams, M. D. Boston Med. and Surg. Jour., CLXXIII, No. 20.

An exhaustive survey of Legislation for the Insane in Massachusetts from Colonial days down to the present time convinces Dr. Williams that the "voluntary and temporary care laws" today are valuable because:

1. They tend to express in legal form the modern conceptions of mental disease, and without endangering the personal liberty of any individual;
2. They at the same time emphasize the patient's cause as a patient;
3. They make it possible to provide early treatment, which is the most hopeful treatment;
4. They afford protection to the patient both from himself and from unprincipled members of the community quick to take advantage of his illness;
5. They afford protection to the family and community against the acts of the patient;
6. They obviate in a large number of cases the delays, legal exactions, semi-publicity and stigma of having been declared insane;
7. They remove the hospitals from the isolation they have suffered in the community and make it possible for them to take their place as hospitals in fact as well as in name, a more integral part of the social fabric;
8. They make possible a wider cooperation between the hospitals and the lay and medical public, which will yield to the commonwealth which supports them a greater usefulness;
9. And, finally, by means of a wider understanding of the more fundamental facts in regard to mental disease on the part of the physicians, cooperating with the hospitals, through the more frequent use of these laws, it may be possible to prevent certain forms of mental disease.

A word to trustees: how would you like to be the general manager of a complex and exacting factory or manufacturing plant, for the successful operation of which you were held responsible and yet in which the heads of departments reported over your head to a trustee, or to the trustees as a body, and in which the trustees felt free to give orders direct to your subordinates? Do you think it would be fair for the trustees to hold you responsible for results under such circumstances? That is exactly the situation in the hospital of which you are a trustee. You hold your superintendent responsible for results, for discipline, for smooth running, and yet if you do not actually force on him or her uncongenial and antagonistic subordinates, you interfere with the discipline by showing in your conduct that you do not trust your superintendent, and give your own orders.

You know very well that is not the way to get results, and though you continually preach "business methods" in the hospital, you do everything in your power to make it impossible for your factory manager to enforce business methods.

Sufficient funds have been raised in a recent campaign conducted by the Grand View Hospital, Sellersville, Pa., to insure the erection of a larger and more modern plant for that institution in the near future.

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# DEPARTMENT OF NURSING

MARY M. RIDDLE, R. N., Editor.
*Superintendent Newton Hospital, Newton Lower Falls, Newton, Mass.*

## The Correlation of Hospital Diets[1]

BY E. GRACE McCULLOUGH,
Dietitian Peter Bent Brigham Hospital, Boston.

It is not within the province of this paper to discuss in detail the different avenues which lead up and through the daily regime for maintaining a satisfied, suitably fed family, other than what may be necessary to demonstrate the relation of part to part or parts to the whole. To obtain the maximum results the dietary department must cooperate with every other department at the points of least resistance. It is assumed that all large hospitals and a majority of smaller ones have an organized, systematized dietary department, in which should enter modern methods.

There must be a clear comprehension of the various and varied diets of any hospital. Hospitals differ greatly in character. They may be charitable or pay, or both. They may be general or specialized, chronic or acute, infants or children, or all-inclusive. It matters not what, but they must be so grouped for a working basis that the results will meet the demands. Whether in wards, buildings or special institutions, the patients are usually apportioned by age, as infants, children or adults, and subdivided into sex, and into medical and surgical.

### INFANTS

Hospitals exclusively for infants are rare. Infants' wards are usually adjuncts to the children's hospital or are part of the maternity service. The feeding of infants, whether they be medical or surgical cases, resolves into the percentage formula as prescribed by the physician, easily calculated and prepared. Looking back ten years, it seems almost impossible that the average intern felt the formula a bugbear, which any grammar school girl today could readily work out if put in the form of an equation.

This feeding formula must take into consideration the age and condition of the infant, the energy quotient, with the nature and severity of the disease. Those who have the care of infants must keep abreast of the times and be able to apply the results of the research which has been done during the past few years along the lines of "deficiency diseases." The emphasis recently placed upon the discovery of vitamines has thrown new light upon certain phases of malnutrition, as has the present activity over the varying split-protein products and the effects of the different cereals usually employed as diluents, with their relation to the intestinal flora and as methods of control for intestinal infection. The lack of more definite data concerning salts metabolism and the part they play in end-products has been a handicap, certainly in the matter of bone and joint involvement; but the coming year is ex-

[1]Read before the Seventeenth Annual Meeting of the American Hospital Association, San Francisco, June 21, 1915.

pected to yield fruit worthy of the great laboratories at work upon these subjects.

There should be in every institution for infants considerable space set apart for the care and preparation of the feedings—one room, preferably two, with walls and floors either tiled or enameled, with refrigeration and sterilization facilities accessible, as well as equipment for the preparation of the various starch products as ordered. The need of a pure milk supply is unquestioned. The securing of a supply of standard percentage cream is always difficult, though it be guaranteed. A small electrical separator is the ideal method, and in addition there should be set up one of the new homogenizing machines which produces such an exceedingly fine emulsion; the fat is more easily absorbed. The whole should be under the surveillance of one who has the knowledge and will faithfully and intelligently carry out orders. Thus the entire feeding of this class of patients resolves itself into a problem which, though simple, costs money, but not so much for raw food material as for the space and necessary equipment plus the salary of such a responsible person.

### CHILDREN

In children's hospitals, where the ages of the patients range from two to twelve years, there should be three distinct house diets, or general diets, for all those who need not be upon what are termed "special metabolism diets." These three general diets must be carefully planned, and calculated with direct reference to group ages to furnish the balanced ration for the growing child. Some of the food and a few dishes may be suitable for all, which would greatly facilitate the kitchen service. Just here is the stumbling block: more thought must be given to the patients than to the cooks, and I grant you that it is easier to get patients than cooks.

I said these group diets must be carefully planned—and I reassert it; there is nothing more dreary than the monotonous daily diet of the average children's ward, consisting of mashed potato, boiled rice, ground meat, and the ubiquitous pudding. In all earnestness I ask, why are sick children still fed upon rice, when hulled rice is today prohibited by law in one nation and gradually being dropped by another? Of necessity the character of the food is simple and easy of preparation, but its monotony often causes it to lose that important factor of digestion, psychic effect. If more time, more thought and more energy were given to the preparation of the same raw material into a greater variety of pleasing dishes, changing their form and color, the results would be infinitely greater. Food on paper may read calories and all of the food principles, but unless food be eaten and assimilated there is a double waste—the waste in material and the waste in energy to eliminate. There has not been enough consideration given in the past to the matter of pleasing children.

Many of our hospitals feel that serving frozen dishes is the acme of extravagance. Probably it would be if they were all made of cream, but it is possible to produce very delicious ices without any cream. You may call them frozen puddings, frappés, sherbets or what you will, but nothing is more refreshing to a fever-tossed patient than one mouthful of some frozen dessert.

Where have the sponge cakes gone—the little ones that you and I used to love? Do you think the fairies have carried them off, as I heard a nurse tell a wee tot one afternoon? They are harmless. Try to be fairies at home and bring back cakes and cookies to all the youngsters in your wards who may eat.

There should be a diet laboratory connected with every children's hospital where special feeding and some general metabolism results may be obtained. Children have nephritis, diabetes, typhoid fever, tuberculosis and many alimentary disturbances just as do adults. Satisfactory results can be secured only from definite premises. It may be necessary to know the tolerance in one case and to establish an equilibrium in another. Metabolism work ought not to be confined to research laboratories, but should be a part of the treatment, and the same methods should be applied. The dietitians in children's hospitals have certainly a broad field for improvement before them. It is possible and necessary that they should meet this requirement in exactly the same manner as in dealing with older patients and make all the diets applicable to the individual case concerned.

### ADULTS

In considering the diets for adult patients there are many more sides to the problem and greater difficulties. Very ill patients are easier cared for than those who have passed the crisis and entered upon convalescence. Nationality, environment and previous habits are distinct factors. Age, sex and temperament present continually daily trials for those trying to please when totaling the whole to suit the nature of the disease and its severity.

There have been many radical changes during the past ten years. One diet has passed out, giving place to another and it in turn has been replaced. Diet lists and grouped diets are being eliminated from ward bulletins. The old broth-beef juice and beef tea regimen has been abolished. The hospital which formerly issued gallons, serves pints, and that is chicken instead of beef. With the clearer understanding of the food value of milk, the daily per capita quantity has fallen fifty per cent, thereby meeting the high cost of clean milk by the smaller quantity. The usual grouping of patients has not yet been abandoned, but we have hopes. There continue to be house diets, soft solids, liquids and specials, yet looking at them closely, we find they stand for somewhat different things today. Rarely do the diets mean definite inclusive amounts, as formerly, but rather the character of the food to be served.

In developing a dietary system for the new Peter Bent Brigham Hospital, the effort was to steer as far from the old known ruts as possible. There are no traditions, and the policy is subject to change. The general or house diet is more liberal than is usual; it eliminates entirely the work and strain of the average diet kitchen, where extras and tidbits for the favored few are prepared, to the dissatisfaction of the neglected majority. Steaks, chops, poultry at reasonable intervals for all, has resulted in better feeding and greater satisfaction, and has not increased the per capita cost. Veal, fresh pork or corned beef never appear on the menus for patients.

The soft solid diet continues to be a diet of care, the amounts of each article as the physician orders, but broader in variety and more liberal in quantity. The special diets are so changed in character and method that they have been termed metabolism diets to differentiate them from those in other hospitals. Whenever a hospital has been attached to a research laboratory, special, weighed and calculated diets have been necessary for the experiments. At the Peter Bent Brigham Hospital the work was begun the other way around. Every patient with doubtful metabolism becomes at once, not the experiment, but a case for treatment by the results of the experiments. At the time of writing 15 per cent of the total patients, or 32 per cent of medical patients, are fed upon the basis of intake and output equilibrium of each partic-

ular patient, with reference to the character of the disease, the more or less severity, plus complications. Food prescriptions are written with the same formality as those for the pharmacist, giving date, ward, name, diagnosis, number of feedings, calories, with the amounts of protein, fats, carbohydrates and salts in grams, total fluids when necessary. These prescriptions are sent to the dietitian, who sees that they are accurately calculated, made up into menus and promptly delivered.

PETER BENT BRIGHAM HOSPITAL

DIET

Ward..... Date.....
Name.....
Diagnosis.....
Feedings.....
Calories.....

℞

Protein .....grams
Fats .....grams
Carbohydrates .....grams
Salts .....grams
Total fluids .....c. c.

Signed.....
Physician.

This entails an enormous amount of reliable work and presupposes a broad knowledge of the composition of all food materials, their suitability, digestibility and end-products. This means additional work for students in our medical schools, much more than the desultory course in dietetics now given. Above all, there must come from the medical profession the demand for better trained dietitians to carry on this advanced work. There must be extra training for cooperation. The dietitian must have the ability to grasp a diagnosis, then intelligently follow laboratory methods and findings.

The special metabolism diets are prepared in a diet laboratory under the care of an assistant and two nurses who are on their six weeks' dietetic course. The food, according to prescription, calculation and menus, is cooked and placed in small selected containers, packed in heated tin boxes or in ice as the case may be, and delivered by a messenger, passing on directly to the nurse in charge, who as carefully unpacks and serves. Any left-over is weighed and calculated by the junior intern on duty in the ward laboratory. The whole is charted. The menus are sent to the laboratory by nine o'clock the following morning.

SAMPLE DIETS

Test Nephritic

HIGH PROTEIN DIET

| Food | Amount | Protein (grams) | Fat (grams) | Carbohydrate (grams) | Calories |
|---|---|---|---|---|---|
| Apple | 50 grams | .20 | .25 | 7.10 | 31.45 |
| Dates | 10 grams | .21 | .28 | 7.84 | 34.72 |
| Milk | 400 c. c. | 13.20 | 16.00 | 20.00 | 276.80 |
| Cream | 40 c. c. | .88 | 16.00 | 1.20 | 152.32 |
| Butter | 30 grams | .30 | 25.50 | ..... | 230.70 |
| 5 eggs | 250 grams | 33.50 | 26.25 | ..... | 370.25 |
| Steak (tenderloin) | 200 grams | 47.00 | 40.80 | ..... | 555.20 |
| Chicken | 100 grams | 21.90 | 7.40 | ..... | 154.20 |
| Cheese (American) | 50 grams | 14.40 | 17.95 | .15 | 219.75 |
| Farina | 150 grams | 2.475 | .315 | 17.175 | 81.435 |
| Potato | 100 grams | 2.50 | .10 | 20.90 | 94.50 |
| Spinach | 100 grams | 2.10 | 4.10 | 2.60 | 55.70 |
| Tomato juice | 100 c. c. | ..... | ..... | ..... | ..... |
| Macaroni | 100 grams | 3.00 | 1.50 | 15.80 | 88.70 |
| Bread | 70 grams | 6.44 | .39 | 15.93 | 78.27 |
| Cocoa | 5 grams | 1.08 | 1.445 | 1.885 | 24.865 |
| Cornstarch | 5 grams | ..... | ..... | 4.50 | 18.00 |
| Sugar | 35 grams | ..... | ..... | 35.00 | 140.00 |
| Sherry | 20 c. c. | ..... | ..... | ..... | ..... |
| Total | | 149.185 | 158.80 | 171.32 | 2711.22 |

MENU

Arranged from above calculation

Breakfast. 7:30 A. M.

Apple .....50 grams
Farina .....150 grams
*c. Dates.....10 grams
2 eggs in ramequin.....100 grams
Toast .....20 grams
c. Butter .....5 grams
Coffee .....150 c. c.
Milk .....25 c. c.
Cream .....10 c. c.
Sugar .....10 grams

10 A. M.

Egg Nog—
1 egg .....50 grams
Sugar .....5 grams
Milk .....100 c. c.
Sherry .....20 c. c.

Dinner. 12:00 Noon

Tomato Bisque—
Milk .....100 c. c.
Tomato juice .....100 c. c.
Broiled steak .....200 grams
Stuffed potato .....100 grams
c. Butter .....5 grams
Bread .....20 grams
c. Butter .....5 grams
Cocoa Cornstarch Pudding—
Milk .....100 c. c.
1 egg .....50 grams
Sugar .....10 grams
Cornstarch .....5 grams
Cocoa .....5 grams
Tea .....150 c. c.
Cream .....20 c. c.
Sugar .....5 grams

3:00 P. M.

Grapejuice .....90 c. c.
Water .....90 c. c.
Crushed Ice

Supper. 5:00 P. M.

Sliced chicken .....100 grams
Spinach .....100 grams
c. 1 hard cooked egg.....50 grams
Bread .....20 grams
c. Butter .....5 grams
Scalloped macaroni .....100 grams
c. Bread crumbs .....10 grams
Cheese (American) .....50 grams
Milk .....25 c. c.
Butter .....10 grams
Tea .....150 c. c.
Cream .....10 c. c.
Sugar .....5 grams

*10 g. dates or prunes may be used to change the flavor and yield approximately 33. calories, 7.85 carbohydrate.

DIABETIC DIET

| Food | Amount | Protein (grams) | Fat (grams) | Carbohydrate (grams) | Calories |
|---|---|---|---|---|---|
| Grapefruit | 100 grams | .79 | .20 | 10.09 | 45.32 |
| Oatmeal | 100 grams | 2.80 | .50 | 11.50 | 61.70 |
| Vegetable (5%) | 200 grams | 2.80 | 2.50 | 6.83166 | 61.02664 |
| Bread | 30 grams | 2.79 | .36 | 15.81 | 77.64 |
| Cheese | 20 grams | 5.18 | 6.74 | .48 | 83.30 |
| Meat | 250 grams | 59.90 | 44.65 | ..... | 641.45 |
| 3 eggs | 150 grams | 20.10 | 15.75 | ..... | 222.15 |
| Butter | 50 grams | .50 | 42.50 | ..... | 384.50 |
| Cream (40%) | 160 grams | 3.52 | 64.00 | 4.80 | 609.28 |
| Total | | 98.38 | 177.20 | 49.51166 | 2186.36664 |

MENU

Arranged from above calculation

Breakfast

Grapefruit .....100 grams
Oatmeal .....100 grams
Lamb chops .....100 grams
Coffee. c. Cream (20 c. c.).....150 c. c.

Dinner

Broth .....200 c. c.
Roast beef .....100 grams
Spinach .....100 grams
Cheese omelet—2 eggs, cheese..... 20 grams
Tea. c. Cream (20 c. c.).....150 c. c.

Supper

*Club sandwich

Custard—1 egg, cream

Cocoa c. whipped cream

*Patients who are accustomed to having club or hotel service find a club sandwich the most pleasing for supper. It, of course, calls for a thin slice of toast (and can only be given when sufficient number of carbohydrate grams are ordered to justify the bread), lettuce, a couple of sliced tomatoes, of cucumber, of bacon, hard cooked egg, chicken and mayonnaise dressing, topped with chopped parsley or mint or capers or sour pickles.

PHOSPHATURIA

| Food | Amount | CaO (grams) | Protein (grams) | Fat (grams) | Carbohydrate (grams) | Calories |
|---|---|---|---|---|---|---|
| Grapefruit | 50 grams | .015 | .395 | .10 | 5.045 | 22.66 |
| Bacon | 50 grams | .0031 | 5.250 | 32.40 | ..... | 312.60 |
| Oatmeal | 100 grams | .130 | 2.800 | .50 | 11.500 | 61.70 |
| Chicken | 50 grams | .0075 | 10.950 | 3.70 | ..... | 77.10 |
| Roast beef | 75 grams | .00825 | 16.725 | 21.45 | ..... | 259.95 |
| Potato | 50 grams | .008 | 1.250 | .05 | 10.600 | 47.25 |
| Dandelion greens | 100 grams | .... | 2.400 | 1.00 | 4.850 | 61.00 |
| Pineapple | 50 grams | .010 | .200 | .15 | 24.400 | 21.55 |
| Rice | 100 grams | .012 | 2.800 | .10 | 10.500 | 109.70 |
| Squash | 100 grams | .020 | .900 | .50 | 47.430 | 50.10 |
| Bread | 90 grams | .027 | 8.370 | 1.08 | ..... | 232.92 |
| Butter | 50 grams | .010 | .500 | 42.50 | ..... | 384.50 |
| Cream | 90 c. c. | .126 | 1.980 | 36.00 | 2.700 | 342.72 |
| Sugar | 40 grams | .... | ..... | ..... | ..... | ..... |
| Jelly | ..... | .... | ..... | ..... | ..... | ..... |
| Total | | .37685 | 54.52 | 139.53 | 167.475 | 2143.75 |

MENU

Arranged from above calculation

Breakfast

Grapefruit ..... 50 grams
Bacon ..... 50 grams
Oatmeal .....100 grams
Toast ..... 30 grams
Coffee. Cream. Sugar.

Dinner

Roast beef ..... 75 grams
Browned potato ..... 50 grams
Dandelion greens .....100 grams
Bread. Butter ..... 30 grams
Pineapple. c. Whipped cream..... 50 grams
Tea. Cream. Sugar.

Supper

Rice c. jelly.....100 grams
Baked squash .....100 grams
Chicken ..... 50 grams
*iii c. Cabbage.
Bread. Butter ..... 30 grams
Tea. Cream. Sugar.

*iii c. = thrice-cooked vegetables.

SALT POOR DIET

| Food | Amount | Protein (gr's) | Fat (gr's) | Carbohydrate (gr's) | Cl. (gr's) | Salts (gr's) | Calories |
|---|---|---|---|---|---|---|---|
| Milk | 400 c. c. | 13.2 | 16.0 | 20.0 | .48 | 2.8 | 276.8 |
| Butter | 60 grams | .6 | 51.0 | .... | ... | ... | 461.4 |
| 3 eggs | 150 grams | 20.1 | 15.7 | .... | .15 | 1.2 | 221.7 |
| Sugar | 35 grams | .... | .... | 35.0 | ... | ... | 140.0 |
| Bread | 120 grams | 11.1 | 1.4 | 63.2 | ... | 1.2 | 309.8 |
| Cream | 40 c. c. | .9 | 16.0 | 1.2 | .04 | .2 | 152.4 |
| Orange | 50 grams | .4 | .1 | 5.8 | .005 | .25 | 25.7 |
| Potato | 100 grams | 2.5 | .1 | 20.9 | .03 | 1.0 | 94.5 |
| Oatmeal | 200 grams | 5.6 | 1.0 | 23.0 | .07 | 1.4 | 123.4 |
| Cauliflower | 100 grams | 1.8 | .5 | 4.7 | .05 | .7 | 30.5 |
| Tomatoes | 100 grams | 1.2 | .2 | 4.0 | .03 | .6 | 22.6 |
| Halibut | 100 grams | 18.6 | 5.2 | .... | ... | 1.00 | 121.2 |
| Chicken | 50 grams | 10.95 | 3.7 | .... | .03 | .55 | 77.1 |
| Peaches (canned) | 100 grams | .7 | .1 | 10.8 | .01 | .3 | 46.9 |
| Total | | 87.65 | 111.0 | 188.6 | .895 | 11.2 | 2104.0 |

MENU

*Arranged from above calculation

Breakfast. 7:30 A. M.

Orange ..... 50 grams
Oatmeal .....200 grams
2 eggs .....100 grams
Toast ..... 40 grams
Coffee .....150 c. c.
Cream ..... 10 c. c.
Sugar ..... 10 grams
Milk ..... 25 c. c.

10:00 A. M.

Milk .....150 c. c.

Dinner. 12:00 Noon

Milk soup (celery flavor).....100 c. c.
Halibut .....100 grams
Potato (stuffed) .....100 grams
Scalloped tomatoes .....100 grams
Bread ..... 40 grams
Butter. Frozen custard.
Tea .....150 c. c.
Cream ..... 20 c. c.
Sugar ..... 5 grams
1 egg

Supper. 5:00 P. M.

Sliced chicken ..... 50 grams
Cauliflower .....100 grams
Bread ..... 40 grams
Butter
Peaches .....100 grams
Tea .....150 c. c.
Cream ..... 10 c. c.
Sugar ..... 10 grams
Milk ..... 25 c. c.

*All food prepared without NaCl.

In the surgical wards special attention has been given to all thyroid cases and acute glycosuria. Excellent results have also been secured after gastrostomy operations. Patients have gained in weight, which is unusual, and have been able to leave the hospital in fairly good condition—the average calories of such fluid feeding being nearly 3,000.

The special dieting has been particularly concerned with what are known as the true dietetic diseases, such as nephritis, diabetes, phosphaturia, etc., and several cases of oriental disease. Some research work has been done in chronic nephritis by Dr. Frothingham and Dr. Smillie, the results of which were published in the Archives of Internal Medicine, February, 1915. There were five tests for chronic nephritis used: 1. The finding of albumin and casts; 2. The rise in blood pressure; 3. The phenolsulphonephthalein test; 4. The total blood nitrogen; 5. The ability of the kidney to secrete added salt and urea on a fixed diet. This fifth test called for several carefully calculated diets which resulted in the standardizing of three nephritic diets, with varying amounts of protein, which are used after diagnosis as indicated. Dr. Christian, for other findings, planned out what is known as a renal test diet. This is after the order of the diet planned by Dr. Mosenthal, of Johns Hopkins Hospital, except where Dr. Mosenthal had three feedings, Dr. Christian's calls for a feeding every two hours, each feeding being of different food material and in different quantities. The feces are noted and the urine collected every two hours. This diet required a preliminary nitrogenous fixation of three to five days. The results of this are to be published later.

The diabetic patients are treated after the most recent methods. The starvation method plus alcohol as recommended by Dr. Allen has resulted in getting our patients sugar-free in 1 to 2 days instead of the uncertain time which usually varied from 5 to 30 days; this is a distinct financial benefit to the hospital as well as to the patient. When the fasting patient has been sugar-free from 24 to 48 hours the next step is to begin feeding very cautiously. Any trace of sugar is a signal for fasting a day with or without alcohol. Invariably the first thing given after a fast is carbohydrate. The only food may consist of 200 grams of vegetables of the 5-6 per cent carbohydrate class. This quantity is gradually increased, the dietitian watching carefully for any trace of sugar; the purpose being to find out the carbohydrate tolerance and to keep the patient free from acidosis. After this carbohydrate period it becomes necessary to secure the protein tolerance. Fat is somewhat less urgently needed except in very weak or emaciated patients, and it can be added gradually, as "an element of bulk is frequently needed during the starvation days to give a comfortable feeling of fullness and to prevent constipation." Dr. Allen has inaugurated a series of what is termed thrice-cooked green vegetables. Nearly all of the starch is thus got rid of. The simplest method of thrice boiling the vegetables is to place them in squares of cheese cloth and move them from one container to the other. The temperature of the water is never lowered. Salt and vinegar are added to make them palatable when serving. They add enormously to the bulk of the diet and can be given after the starvation days are over, being food carriers of fat when the calories need to be increased and fat allowed.

A new method for home continuation work was started in March, 1914, when it became necessary to care for diabetic patients on leaving the hospital. They were advised to return to the outdoor department weekly and upon request for some idea of what they should eat I suggested to Dr. Christian, our physician-in-chief, that if a course of simple cooking lessons within the means of the ordinary household were given to these patients it would add greatly to the benefits of home treatment. We asked the cooperation of a technical college, but there did not seem to be anyone available, so I extracted from my busy hours time to attend to it personally. Green vegetables, though expensive, were treated in a most careful manner, so as to give the patients an idea of at least ten dishes to be made of the same food materials, for variety. The cost and economy in left-overs were emphasized and it proved most satisfactory. Though we were granted permission by the committee to fit up a small kitchen in the outdoor department for this purpose, we thought it advisable to utilize one of the general kitchens to test out weak points. These

classes were attended by both men and women. Some men who were out of work and were taking care of themselves attended the classes; also women who had to cook for their husbands, as well as women who had the disease. This year, owing to my increased duties, it was almost impossible for me to carry on the work personally, but we have secured through the social service department a very competent person to take charge of it, and have added to the lessons the matter of using a simple test for sugar in the urine which they can do at home, using Benedict's solution. Whether this will prove as broad in its value as the simple lessons remains to be seen, but it has been estimated that $2,000,000 in fees have been lost to the physicians of the country. Testing urine, to them, always meant $3.00 each time.

In typhoid fever the high calorie diet of Dr. Coleman seems to be generally used. That is calculating about 40 calories per kilogram of body weight. The mixed diet readily furnishes an amount of energy, but it is not sufficient to establish the nitrogenous equilibrium. The best results are obtained by making the total calories from 4,000 to 5,000 per 100 kilograms. The outside requirement, however, must vary with the individual case and in different stages of the disease. The relative proportion of protein, fat and carbohydrate is largely theoretical, but the best results are obtained by sparing the body protein. To reach this maximum the food is selected with care in regard to the waste products and to prevent excess of any one of the food principles.

We have experimented with the fluid preparations in the effort to make them more palatable, and to establish a standard. There are numbers of dishes which can be substituted to break the awful monotony heretofore prevalent. Considerable of the material which enters into the calculations is frozen and served as mid-meals. Our patients leave the hospital after a short convalescence in very good condition, having lost little weight.

The last of my message, the question, what can be done to bring the whole subject of hospital diets to a higher standard and to meet the new requirements? is the most difficult of all. It is comparatively easy to look over the field and see what is being done, easier still to tell of that with which one is vitally interested and doing, but quite another thing to outline directions for those who have not been required to meet the practical side of such feeding. Dr. Mann certainly saw the question in its greatest significance, with clear vision. The new requirements and different standards are not to be confined to the larger hospitals, but are here for all, and will eventually reach every small hospital throughout the country. Why? Graduate students and interns from the hospitals feeding along fixed and definite methods will go out as residents and visiting doctors to the small hospitals; they will meet the same diseases and similar conditions, will refuse to work blindly, and will demand something not only from the hospital, but from the nurses in private practice, who must be equal to such emergencies.

Technical schools that prepare dietitians are awake to the situation as evidenced in a questionnaire sent out last autumn. Dietitians already employed in and about Boston realize their shortcomings, and have started a round table for a study of this new work. The outcome of the first meeting was a request to the Harvard Medical School for admission to work. Women will be admitted to certain courses of lectures and laboratories at the summer school, and a series of dietetic conferences is being arranged for next winter, open to both men and women.

If the doctors call for it and the dietitians are ready, it should be a very simple matter to equip a diet laboratory with the utensils (which may be the simplest possible)—diet scales, selected containers, etc., each hospital meeting the problems of delivery and serving in accordance with its general routine.

One of the questions which has been received for the dietary question box is apropos, and may as well be considered here, instead of in the separate session. "How can a small hospital, unable to afford a dietitian, be able to take care of special dieting, as it is often asked to do?" My answer is, be willing to pay $50 to $100 to an expert dietitian, just as you have to pay an auditor or engineer; let this dietitian work out for you a series of diets with possible varying amounts of fats, carbohydrates, protein and salts to suit the disease. From these calculations work out a large number of menus and place them in a card catalog. Then send one of your brightest nurses for a dozen lessons in the preparation of the food so selected, and learn by doing it in your own hospital.

Briefly summarizing from the foregoing and general impressions, I find: 1. The whole question of diets is unsettled, or rather in a state of evolution. The older hospitals hug their traditions; the later and newer ones are viewed with suspicion, as not fully tried and likely to be found wanting. 2. That too much stress has been placed upon the difficulties which seemingly stand in the way, such as expense of equipment and material, and the difficulty of finding the proper person to launch such innovations, and the uncertainty of the medical men themselves. 3. That the cooperation of all departments—the superintendent, the entire nursing staff, physicians and their assistants—is essential for the smooth running of such detailed work. 4. That the keynote of ultimate success in the matter of metabolism diets is a wider knowledge of the benefits to be derived.

## A Simple and Practical Method of Catheterization

BY IDA M. GAILEY, R. N.,
Superintendent, Conemaugh Valley Memorial Hospital, Johnstown, Pa.

Those who have taught pupil nurses to catheterize, and who have watched their work closely, will, I believe, agree that the points in the procedure most difficult for the average pupil to grasp are, i. e.: (1) how to keep their hands from conveying infectious material into the meatus; (2) to be able to find, easily, the meatus urinarius, especially in puerperal patients, where the labiæ are swollen. To remedy this I have adopted the technic outlined in the succeeding paragraphs.

*Equipment.*

One sterile tray containing:

(1) One sterile pan, containing two perfect glass catheters, each having five inches of rubber tubing attached to its distal end.

(2) One sterile pitcher containing one quart of sterile antiseptic solution of proper strength for flushing.

(3) One sterile wide-mouth glass bottle, capacity at least one quart, of special design for this purpose only.

(4) One package of three sterile towels.

(5) One pair of good sterile gloves.

Additional supplies:

Douche pan.

Draping sheet.

Screen for bedside.

*Procedure.*

(1) The pupil takes tray and other supplies to bedside and places screen around bed.

(2) She washes her hands carefully and dries them on clean towel.

(3) Puts patient on douche pan, drapes with clean sheet, folding bed covers to foot of bed.

(4) Places the tray at patient's feet.

(5) Opens sterile packages—puts on sterile gloves.

(6) Places one sterile towel over pubic region and one over thigh next the pupil.

(7) Picks up handle of pitcher with extra sterile towel with right hand. With thumb and forefinger of left hand separates labiæ at the uppermost point, and holds them well separated.

(8) The solution is poured from pitcher in right hand with some force, so that the flow strikes against the meatus, thereby opening it, and at the same time washing infectious material downward from it, thus cleansing the orifice.

(9) Still holding the labiæ apart—not letting them fall together for one instant—the pupil sets the pitcher on the tray, picks up the rubber catheter at the rubber end, and kinks the rubber as she inserts the catheter into the meatus.

(10) Then releasing the thumb and forefinger of left hand, with them she holds rubber end of catheter closed until, with right hand, she places the bottle in douche pan, directing rubber end into it, allowing the urine to flow directly into a sterile container, thus providing a sterile specimen if same is wanted for examination.

The rest of the technic is the same as is usually taught: pressure over the supra-pubic region, and reaching recesses of the bladder by gentle turning of the catheter to facilitate the flow of urine.

The catheter must always be inspected before insertion for cracks or imperfections, and for that reason or in case of accident I instruct pupils to sterilize two catheters for each catheterization.

After the urine ceases to flow the pupil flushes the labiæ, removes patient from the douche pan, dries the buttocks and makes the bed toilet.

The gloves must be in good condition, and in putting them on the nurse must observe a strict rule, as follows: the glove must be put on without the bare hand or fingers coming in contact with the outside of the glove. This method is taught, I believe, in surgical technic in all schools for nurses, therefore I shall not go into detail in discussion of the procedure.

### The Death of Miss Margaret Hamilton

A few weeks ago there came from the War Office in London the sad news of the death of Miss Margaret Hamilton—the first death of an American nurse on active service at the western front with the British expeditionary force. Miss Hamilton was one of the seventy-five nurses who went over to France last June with the Chicago Unit. This unit, which included thirty-two doctors, sailed from New York June 12, and after a short stay in London was sent over into France, where it took over a line of communication hospital of 1,000 beds, about forty miles back of the firing line.

From the very beginning of the work of this unit came stories of the efficiency and tenderness of the American nurse. Her quiet, skilful and sympathetic care of the wounded "Tommies" was such that, as one of the men expressed it, it made them even lose their patriotism so much that they never wanted to go back to the front after once having been in hospital.

In the face of all sorts of discomforts incident to camp life, the army rations, and the canvas hutches, no one ever heard a word of complaint from a single one of these nurses. When there were "drives" up at the front and the work ran heavy at the hospital these women would do a forty-eight-hour stretch with practically no sleep, without asking for relief; and when the work ran light they were wise enough to enjoy long walks in the beautiful country around about the camp, so that really at the end of the summer they were all in first-class physical condition.

It was a great shock, then, when the news of Miss Hamilton's death came so suddenly. No finer tribute could have been given a British officer than was paid to this young American girl, who had gone abroad urged by the desire to acquire greater proficiency in her profession for the benefit of others on her return and for the sake of humanity in this great war.

Fig. 1. Miss Margaret Hamilton.

By permission of her sister the following tribute, written by Major George P. Gill, of the Chicago Unit, is printed here, which tells the story of the military funeral:

"On October 22 a dark cloud of sorrow and sadness enveloped our camp. One of our Nursing Sisters, Miss Margaret Hamilton, of East St. Louis, most capable and conscientious and universally loved and respected, both by her friends and associates in the States and by the members of the Chicago Unit, contracted a meningitis, while on duty, and died within thirty-six hours.

"It was a great shock to us all, sudden and unexpected, and our hearts and minds at once turned instinctively to those who held her dear, back home, in the vague hope that something could be done to relieve the shock of the inevitable grief and sadness, especially to the mother. Aided by the British representatives with whom we are associated, we tried to make arrangements to send her body back to America, but under existing conditions (the whole country is under military rule) it was impossible, such a procedure being absolutely forbidden.

"The British authorities were very considerate and did all that could be done at such a time and under such circumstances. Her death was mentioned in Routine Orders as occurring "On Duty, On Active Service;" she was given a military funeral, with full honor. The simple impressiveness of it will never fade from the memory of any of us, and the seriousness of the thoughts evoked will remain indelibly impressed on us all. She was buried in the officers' section of the British military graveyard for this district, where hundreds of officers and men of the British expeditionary force are buried; those who sacrificed their all, and gave their lives for their King and country during the present war. The cemetery is a mile from our camp, within sight and sound of the sea, forever

chanting a requiem for the heroic dead. The graves are on a level plot of ground, surrounded on all sides except toward the sea by great sand dunes, a most peaceful and picturesque spot, ideal for the purpose to which it has been consecrated. On the south the hills are covered with trees and shrubbery; over the dunes to the north are level, cultivated fields. To the east are rolling, billowy meadows and sand dunes. At this time of the year, when the delicate brush of the changing season is transforming the beautiful summer green of Normandy into the most exquisitely delicate rainbow tints, the background of the simple, impressive service was indeed the most beautiful of nature's paintings—an autumn landscape.

Fig. 2. The funeral procession. Full military honors were accorded Miss Hamilton.

"The casket was draped with the American flag and covered with flowers and wreaths; a huge blanket of chrysanthemums, made by the loving hands of her nursing coworkers, together with Old Glory, was buried with her. The flowers and wreaths from the other hospitals and from her many friends were placed on the grave afterwards. The casket was borne on a two-wheeled carriage, preceded by the Chaplain and four trumpeters, accompanied by eight senior officers of the unit, acting as pallbearers, and followed by the personnel of the unit, noncommissioned officers and men of the Royal Army Medical Corps, the Nursing Staff, and then the officers of the Twenty-third General Hospital (which is the official name of the Chicago Unit). In turn came the Nursing Sisters from the Canadian Hospital No. 1, British Sisters from the Twenty-fourth, Twenty-sixth General Hospitals and the Isolation Hospital, Allied Forces Hospital, Liverpool Hospital, nurses from the late Harvard Unit (known as the Twenty-second), the Duchess of Westminster's Hospital, Le Touquet, accompanied by the Chief Matron of Nurses, Miss McCarthy. In turn came the regular Royal Army Medical Corps officers, every hospital in the district being represented, accompanied by Colonel Carr, Assistant Director of the Medical Service.

"As the cortege slowly wended its way to the graveyard, tears were falling freely, and half-stifled, audible sobs were frequent, as they were massing lines deep around the open grave. The coffin with the physical remains of our American sister was slowly lowered into the grave, the bottom and sides of which had been covered by loving hands with ivy and autumn leaves. The Chaplain's voice was heard and the simple burial service was uttered, the silence broken only by an occasional sob, which relieved the tension of a suffering heart, and the creak of the straps that bore the weight of what had been reclaimed by the earth. The trumpeters sounded the 'Last Post,' and as the notes of the familiar call echoed and re-echoed among the hills, with every officer and soldier present standing at 'Attention' with hand at salute, they were endowed with a newer, deeper and more cherished significance. Many eyes were dimmed with moisture that had been strangers to tears for years. Convulsive sobs and freely flowing tears, blended with thoughtful, serious consideration, that opened up new views of past, present and future. Who will say that there was one present that did not go away strengthened, fortified, purified?"

Fig. 3. Miss Hamilton was buried in the officers' section of the British military graveyard.

### Alcohol for Hospitals

Inquiries have been recently made about the method by which hospitals may obtain alcohol "duty free." Unfortunately the United States government has never recognized the hospital as being entitled to any consideration of any sort, consequently alcohol is put on the same plane as surgical instruments and scientific appliances; that is, the tariff, or tax, or duty on all these commodities is waived only in the case of educational and scientific institutions.

Hospitals having incorporated training schools and hospitals connected with teaching institutions, that is, medical schools, can get their alcohol duty free; other hospitals must pay the duty. Tax-free alcohol costs around 50 cents a gallon, purchased by the barrel; when the tax must be paid the price runs about $3.50 a gallon.

This is an outrage, of course, and the government ought to be ashamed of itself to handicap its most profitable institutions in that kind of way. Some day this is going to be changed, but the hospitals will have to be very much closer together than they are now, and they will have to resolve to make a fight at Washington that Congress will listen to.

# FOREIGN CORRESPONDENCE

## HEATING AND VENTILATING BRITISH HOSPITALS

**While the United Kingdom Closely Follows America, British Engineers and Physicists Have Developed Some Preferences of Their Own—Plenum System Is Almost Obsolete and Unpopular—Some of the Methods**

BY SYDNEY F. WALKER,
Consulting Engineer, Bath, England.

The heating and ventilating of large buildings, by modern methods, are necessarily very closely connected. In some British hospitals, notably the New King's College Hospital at Denmark Hill, just outside of London, open hearth fireplaces are still employed for heating the wards, but they are assisted by radiators, and the ventilation there is closely connected with the heating system. The open hearth stoves that are still employed in modern hospitals are arranged to deliver a certain quantity of warmed air into the room. The air is led to a heating chamber at the back of the fire, through a duct from outside the building, and passes into the room through holes in the chimney breast, or at the top of the stove. Stoves have been made on these lines from sizes suitable for nurses' bedrooms, to those used in large wards. A few years ago they tended to become very much the vogue, but latterly radiators have largely taken their place.

In the great majority of hospitals, as in all large buildings, heating is accomplished by burning coal under boilers at a central part of the building, and distributing the heat by the aid of steam, and either hot water or air. It should be mentioned incidentally that in this matter, as in so many others, the United Kingdom has followed America, and at some distance.

In America the exigencies of the labor problem very early obliged even householders to employ central heating systems; and when the high buildings, which are such a feature of American cities, began to come into being, the distribution of heat from a central station became even more a necessity.

In the old country, what were called natural systems of heating and ventilating died hard; the system of natural ventilation is not dead even yet; but in large buildings the necessities of the case have obliged the distribution from central heating stations to be adopted more or less generally all over the kingdom, as well as in the colonies. In the United Kingdom at the present time the following systems of heating and ventilating are employed: the plenum system; the vacuum or extraction system; the hot water radiator system, and the steam radiator system.

In what is called the plenum system the air is cleaned, dried, moistened, heated, cooled and subjected to whatever conditioning may be desired, and is distributed into the wards and other parts of the buildings by means of ducts, the air being forced through the ducts by the aid of a fan at the entrance to the building and other fans at the entrance to the ducts. The vitiated air in the plenum systems usually escapes from the wards, etc., by outlet ports leading to shafts, which again lead to what mining engineers would call an upcast shaft—a shaft in which warmer and lighter air is continually ascending. In the vacuum or extraction system the wards and other parts of the building are heated by radiators, hot pipes and open fireplaces, the vitiated air being drawn out through shafts either directly to the atmosphere, or into air chambers from which it is exhausted either by what are known as natural air currents, or by the aid of fans. The favorite method of heating wards and nearly every part of hospital buildings is by means of radiators, sometimes assisted by hot pipes fixed at the floor or near the ceiling. The radiators are usually placed under windows and an inlet for outside air is provided in the wall behind the radiator, shields being also sometimes used on the inside of the radiator to direct the warm air upwards. Radiators are employed sometimes alone, sometimes in addition to the plenum system, sometimes, as at the New King's College Hospital, in addition to open hearth stoves.

The term radiator is of course a misnomer, like many others used in connection with heating appliances in the United Kingdom. They heat by convection, not by radiation. The only apparatus in which radiation operates are the open hearth stoves mentioned above.

### THE METHODS OF HEATING THE RADIATORS

As mentioned above, steam (usually generated in what are called in the United Kingdom Lancashire boilers, but the writer believes are called in America tank boilers) is the source of all heat in modern hospitals. Water tube boilers are used to a small extent, but the tank boiler is the favorite. None of the reasons which have led to the use of the water tube boiler apply to hospitals. The steam pressures used are low and boilers are always in use day and night from year's end to year's end.

Steam may be applied directly to the radiators, or it may be employed to heat water, which in its turn is caused to flow through the radiators. The direct steam heating system, except where the steam is at very low pressure, is now very rarely employed in British hospitals. It is a favorite method of heating operating theaters because of the speed with which the theater can be warmed and subsequently cooled.

Even there, however, the pressure at which the steam is delivered to the radiators is usually reduced to five pounds per square inch above the atmosphere. For steam heating the more common method now is to use steam in the radiators at less than atmospheric pressure. Exhaust steam from engines and steam heating appliances is sometimes employed for the purpose, but more commonly what is called "live steam" is taken from the boiler, and by the aid of a reducing valve its pressure is lowered to one or two pounds above the atmosphere. By the time the steam arrives at the radiators, it is at or below atmospheric pressure. The steam is allowed to expand inside of the radiators, the exhaust steam and the water which has formed by its condensation being withdrawn and delivered to a tank from which the water for feeding the boiler is drawn. The pump employed to withdraw the steam and condensate from the radiators is practically an air pump, and its effect is the same as that produced in steam condensers employed with engines furnishing power. The vacuum pump first withdraws the air from the radiators, and in so doing lowers the pressure opposed to the steam entering the radiators, and allows the steam to expand so that a smaller quantity of steam performs the same work as a larger quantity, if the pressure has not been lowered, and what is more important from the heating

point of view, the temperature of the steam in the radiator and that of the surface of the radiator itself is lowered to about 180° F.

With steam at five pounds per square inch above the atmosphere, as employed in operating theaters, the temperature at the surface of the radiator will be in the neighborhood of 220° F. Higher steam pressures, such as were in use in radiators for the heating of buildings a few years ago, were found unsuitable for hospital work because of the smell caused of "burnt air." Radiators using steam at what power engineers would consider very moderate pressure, cause the surfaces of the radiators to attain temperatures from 300° F. and upwards, with the result that organic matter floating in the air is burnt, and, it is thought, other oxides formed.

In one form of low pressure steam heating, in which steam below atmospheric pressure is employed in the radiators, a very ingenious method of controlling the temperature in blocks of buildings has been introduced. Each radiator is provided with a hand operated valve to regulate the rate at which steam enters the radiator.

In addition, each radiator or group of radiators is controlled by valves, through which the steam is made to pass, the valves in turn being operated by the difference between the atmospheric pressure of the air and the lowered pressure produced by the vacuum pump. The valves may be controlled by thermostats in the wards, or in the neighborhood, or they may be controlled by what the inventor has called switch valves placed in the heating station, several switch valves being mounted on a switchboard. It is claimed that by having the switch valves in the central heating station the attendant can save considerably in fuel during spring and autumn, by cutting off the supply of steam to blocks upon which the sun is shining. We are never certain when we shall have a sunshiny day nor how long the sun will shine. When the attendant observes that the sun is shining brightly upon a particular block he cuts off the steam from the block by throwing over the switch controlling it at the central heating station. If the sun disappears, steam is delivered again to the block by merely throwing the switch back. The arrangement of the switch is as follows:

The valve itself, at the radiator, or in the pipe supplying several radiators, is in the form of a plunger. It is moved by a spiral spring and the difference in pressure between the atmosphere and the vacuum produced by the pump. Normally the spiral spring keeps the plunger in such a position that the passage of steam to the radiator or to the pipes supplying the radiators is stopped. When the switch valve is turned so that a pipe leading from it to the valve and also leading to the low pressure side of the vacuum pump excludes the atmosphere and exposes the plunger to the lowered pressure produced by the vacuum the valve opens and allows steam to pass to the radiators. When the switch valve is turned in the opposite direction connection is broken between the valve controlling the supply to the radiators and the vacuum and opened to the atmosphere, the result being that the plunger is forced backwards, closing the valve and stopping the passage of steam through it. Thermostats in the wards do automatically what the attendant does at the switchboard. The thermostat is set for a certain temperature. If the temperature in the ward rises above that figure the thermostat breaks the connection between the controlling valve and the vacuum, the valve then being closed by the spiral spring. When the temperature falls below the figure at which the thermostat is set the connection between the vacuum and the controlling valve is opened, the plunger then opening the passage to the steam.

The thermostats employed in hospitals in the United Kingdom are of two kinds. In one the expansion and contraction of a tube of ebonite opens and closes the valves by the aid of levers and springs; in the other the same thing is accomplished by the difference in the expansion and contraction of two metals. Complaints were made to the writer in one hospital at Glasgow that the mechanism of the valve stuck owing to the atmosphere.

Thermostatic control is also obtained by the aid of compressed air. Air is compressed in any convenient manner, usually by a small electrically driven air compressor, and the compressed air receiver is connected to the steam valves of the radiators by small pipes, as with the vacuum control. The thermostat opens or closes a small valve between the compressed air receiver and the radiator valve and causes the latter to open or close when the temperature falls or rises.

Electrically operated thermostats are also used in much the same manner, a rise or fall in the temperature of the ward closing or opening an electric circuit and causing an electromagnet to operate in the same manner as the difference in pressure in the vacuum and compressor air systems.

### METHOD OF USING HOT WATER

The water that is to circulate in the radiators is heated by three different methods; in two of them what power engineers would call feed water heaters are employed; in the third, steam is directly injected into the water. The makers have given the heating apparatus employed in the first two methods the barbarous name of "calorifiers."

A calorifier is a cylinder in which a nest of pipes is fixed between two end plates. Steam is arranged to flow through the pipes, and the water to be heated flows all round them. The steam, which is condensed by reason of delivery of its latent heat to the water, is drained away to the hot well or feed tank from which the boiler is fed.

Calorifiers are arranged sometimes in batteries near the boiler house (this is the latest modern arrangement), and sometimes at different parts of the building. Modern hospitals being arranged in blocks, a calorifier may be fixed in the basement under each block, and steam may be led to it. The water heated by the aid of steam in the calorifiers sometimes circulates on the simple thermosyphon system, but more frequently, in modern plants, is "accelerated," as it is termed, by the aid of a pump. In either case there are one or more rising mains, carrying the hottest water, leading from the calorifiers to the top of the building.

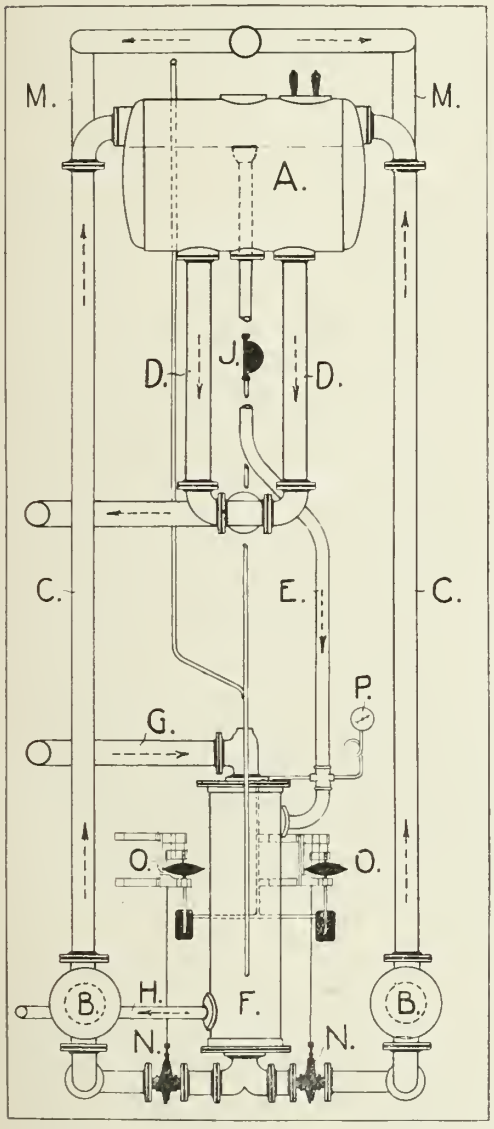
Usually a rising main is connected to a ring main at the top of the building, branch pipes lead from the flow ring main to the radiators at the different floors, and from the radiators to a return ring main in the basement, this last being connected to the calorifiers. The addition of a pump, by increasing the velocity of flow of the water through the radiators, allows of a very much smaller section of pipe being employed, and this is in itself a considerable advantage. It is this method which has enabled all the calorifiers for a large building to be placed in one central heating station near the boiler house. The pumps employed for accelerating the flow are sometimes of the reciprocating type and sometimes centrifugal pumps. With the reciprocating pump the arrangement is very similar to boiler feed pumps. Centrifugal pumps are usually driven by electric motors. The two kinds of pumps have their advocates, and there is a good deal to be said for each.

Where a steam pump is employed the exhaust steam from the pump can be used in the calorifier. In the new Manchester Royal Infirmary, for instance, where the ac-

celerated hot water system is employed, steam pumps are used and the exhaust steam from them and from other engines employed in the hospital provides the hot water supply. As practically all hospitals are now lighted electrically and employ electricity for motive power the arrangement of the centrifugal pump, driven by an electric motor, is a very convenient one. Its economy against that of the steam pump depends upon the cost of current.

At the New King's College Hospital, for instance, current is generated on the ground at about 1½ cents per Board of Trade unit. The unit is 1,000 watts for one hour. Hence the centrifugal pump used there as the accelerator for the hot water supply should be economical. On the other hand, hospitals have been charged as high as 6½ cents per unit, and in that case the centrifugal pump would not be economical. Many hospitals have their own electricity generating plant, steam being employed in the engines driving the dynamos. In these cases the exhaust steam can be used for the heating water, so that the cost of the electricity is very small.

The system in which steam is injected into the water to be used in the radiators is employed at two large hospitals in Glasgow, and, the writer believes, at several others throughout the Kingdom. It is the invention of Captain Reck, of Copenhagen. Captain Reck provides what he calls a "circulator," which he inserts in the circuit of the hot water system. The circulator is a small cylinder into which the steam is injected by means of a nozzle. The steam is broken up inside the cylinder by the aid of perforated plates. The return water from the radiators passes through the circulator and is heated by the injection of the steam. The return water also passes through a




A. Expansion Tank.
B. Circulator.
C. Motor Pipe.
D. Main Flow Pipe.
E. Overflow Pipe.
F. Condenser.
G. Main Return Pipe.
H. Condensation Pipe.
J. Automatic Air Valve.
K. Automatic Air Valve.
L. Vacuum Valve.
M. Steam Supply Pipe.
N. Control Valves.
O. Diaphragms.
P. Pressure Gauge.

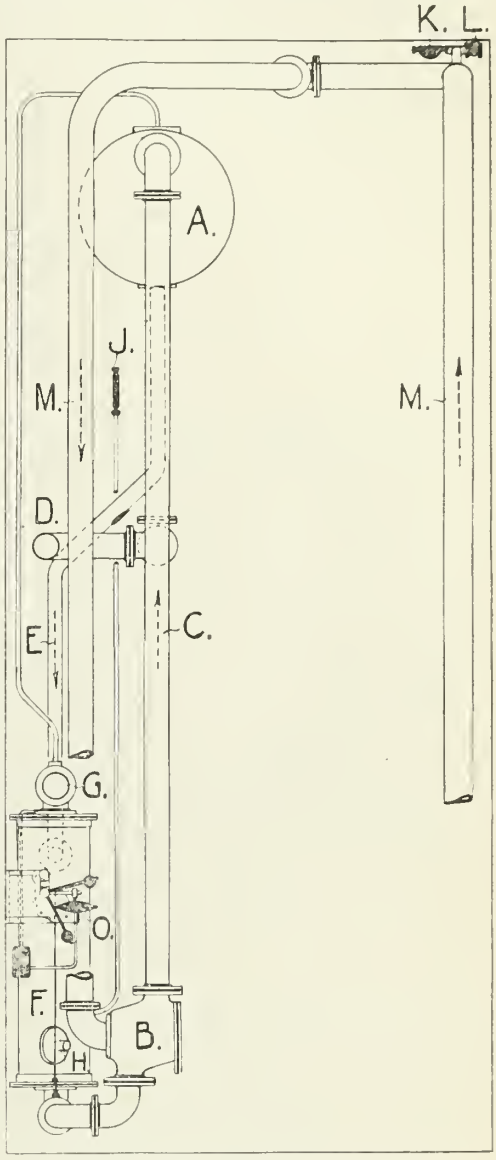
DESCRIPTION

**The Expansion Tank (A)** is fixed above the highest radiators, and the flow and return pipes are led up to and connected to it. **The Circulator (B)** is fixed on the main rising pipe several feet below the Expansion Tank, and through it low pressure steam is introduced, and this causes the water in the **Motor Pipe (C)** between the Circulator and the Expansion Tank to boil.

The connection of the ascending and descending pipes to the Expansion Tank is made in such a manner that the steam is separated from the water by gravity and discharged into the space above the water line in the Expansion Tank, so that the descending **Flow Pipe (D)** contains water only.

It will be seen that between the contents of the portion of the **Motor Pipe (C)** which contains water mixed with steam and those of an equal length of the **Flow Pipe (D)** which contains water only there will be a great difference of weight, and a circulating head is obtained which is equal to ⅜ of the height of the Motor Pipe containing the emulsion of steam and water.

The Expansion Tank is fitted with a close cover and is provided with an **Overflow Pipe (E)** above the water line through which the steam discharged into the upper part of tank is led to the **Condenser (F)**.




The Condenser consists of a cylinder with numerous tubes between waterway ends, and is fixed on the main **Return Pipe (G)** before the Circulator. The cooled water from the Heating Apparatus passing through the tubes of the Condenser condenses the steam which is brought to the space round the tubes. The water of condensation is carried in **Pipe (H)** to the Hot Well and reused for feeding the Boilers.

**An Automatic Air Valve (J)** is fixed to the Condenser to keep the space above water line in Expansion Tank open to the air except when the discharge of steam is so great that it reaches the air valve, when the air valve will close and prevent the steam from escaping.

**Automatic Air and Vacuum Valves (K) and (L),** respectively, are fitted on top of the **Steam Pipe (M)** for the purpose of discharging and readmitting air. **The Air Valve (K)** will remain open until all the air has been expelled, and will then close on approach of steam. **The Vacuum Valve (L)** will be kept closed by steam pressure, and will open when steam supply is cut off so as to readmit air to take the place of the steam, and prevent a vacuum forming in pipe.

**The Valves (N)** are fixed on main rising pipe to Circulator to automatically control the proportion of steam and water forming the mixture in the Motor Pipe.

Those valves are regulated according to the pressure of the steam discharged into the upper part of Expansion Tank. A connection is made from the **Overflow Pipe (F)** to the **Diaphragms (O),** and the movements of the Diaphragms as the result of changes of pressure operate the levers to which the spindles of the **Valves (N)** are attached.

**For normal working** the Apparatus is set by means of the weights on the levers, so that the **Valves (N)** are full open when the pressure registered on the **Gauge (P) is 7½ lbs. per square inch.**

condenser before it reaches the circulator, the heat delivered to it by the steam in the condenser raising its temperature, the final temperature required being regulated by the quantity of steam injected in the circulator.

The usual expansion tank that is common to all hot water systems and which is always fixed near the top of the building plays an important part in the working of the Reck system. After passing through the circulator the pipe leading the water away contains not only water at a high temperature, but a certain quantity of steam, the result being the formation of what mining engineers call a motive column. The steam and water in the pipe leading to the expansion tank is lighter than an equivalent column in the flow pipe of the system. The circulator is fixed a few feet below the expansion tank, and what the inventor calls the motive pipe delivers the steam and water into the tank.

The expansion tank is made with an airtight cover and it fills two distinct offices. It provides room for increasing the volume of the water in the system when it is heated up, and there is a space above the highest water level in which steam that has not been absorbed by the water in the circulator or in the motor pipe is stated to escape from the water and to flow out of the tank to the condenser.

Fig. 1 shows diagrammatically the arrangement of the circulator, the condenser and the flow and return pipes. The flow pipe commences at the expansion tank, the hot water flowing downwards to the radiators instead of upwards as in the usual thermo-syphon systems, the cooler water from the radiators passing upwards through the return pipe and through the condenser to the circulator. The office of the condenser is to utilize the heat in any steam that is not absorbed by the water.

The usual overflow pipe in the expansion tank, as shown in the figure, carries down the steam which separates out through the water flowing up the motor pipe into the expansion tank and carries it to the condenser. The condenser is similar to the surface condenser employed by power engineers. It is also similar to the calorifier. It is a cylinder containing a nest of tubes held between two end plates, the end plates completely filling the cylinder so that it is divided into steam and water compartments. The cold water from the return pipe flows through the tubes, and the steam from the expansion tank flows round them, the condensate being carried off by another pipe to the feed water tank. One important feature that is claimed for the Reck system is that the circulator may be placed anywhere. With boilers, calorifiers, etc., it is practically necessary to place the heating apparatus in the basement. With the Reck system the circulator is usually placed high up in the building, a few feet below the evaporating tank. A convenient position is the tower, which is a feature of some institutions. The temperature of the water in the system is controlled by the quantity and pressure of the steam admitted to the circulator. The steam pressure is reduced by a reducing valve to from 2½ to 7½ pounds per square inch. One point should be mentioned: it is necessary that the steam pipe should be carried right above the expansion tank, in order that there may be no chance of water finding its way into the steam pipe from the circulator when the heating system is shut down.

In practice a steam pipe is carried above the evaporating tank, as shown in the drawing, and a connecting pipe dropped from it to the circulator. The question of the air present in the system and that of a possible vacuum in the system have also been provided for. A pipe is carried from the steam portion of the condenser, and at the end of the pipe an air valve is fixed, the evaporating tank being in direct communication with the steam side of the condenser. Any air that is present that is brought over with the steam from the boiler, for instance, is forced out through the air valve. When an excess of steam flows into the condenser the air valve is closed until the steam excess is reduced. An air valve and a vacuum valve are fixed at the highest point of the steam pipe above the evaporating tank. Any air that is present in the steam is forced out through the air valve which only opens outwards. When the system is shut down and steam is being delivered to the circulator the vacuum valve opens and admits air to the steam pipe. The quantity of steam admitted to the circulator is controlled by special diaphragm valves, set for certain pressures and capable of regulation.

### CONTROL OF TEMPERATURES IN THE RECK SYSTEM

The control of the temperatures at the radiators in the Reck system is obtained by two methods. Each radiator has the usual valve by which the rate of the flow of water through it is controlled. In addition, the temperature of the water entering any group of radiators is controlled by what the inventor has called "mixers." As with the thermo-syphon system, the temperature of the water at different parts of the flow and return pipes varies. It will be hottest where it leaves the evaporating tank and coldest where it enters the condenser. Branch pipes are taken from the hottest portions of the flow pipe and from the coldest portions of the return pipes, and are brought to a system of valves leading to the group of radiators, the temperature of which has to be controlled. By opening a valve allowing more or less hot water to flow along the pipe leading to the group of radiators or by opening a valve allowing more or less cold water to flow along the steam pipe the temperature of the water in the group of radiators can be raised or lowered at will. This is the method that is employed in two hospitals, the Western Infirmary, and the Royal Hospital for Sick Children in Glasgow, for controlling the temperature at the radiators. The Reck system has also been employed, the writer understands, with steam boilers such as would be suitable for small institutions, but he understands that the results with small boilers were not as satisfactory as with large boilers. He believes that no attempts have been made to utilize exhaust steam for the purpose.

### COMPARISON OF THE DIFFERENT SYSTEMS

The plenum system, though it promised to be the vogue some years ago, has not found much favor with hospital authorities in the United Kingdom. The idea underlying the arrangement is remarkably good. The idea of maintaining an atmosphere always at the temperature required, always with the humidity required, sounds ideal. In practice, however, several important disadvantages have arisen. Complaints have been made that the air current brings dust into the wards. Unfortunately this complaint is apparently justified, but it would appear that it should be quite easily provided against. At the Leicester Infirmary, the man who looks after the apparatus told the writer that he had found that by frequently cleaning the ducts through which the air passes to the wards and providing an efficient filter for the air before it enters the ducts all complaints of the presence of dust have been eliminated. It is the old tale, of course, of looking after the apparatus.

In British hospitals cleanliness has been raised to a science. Wards in particular, staircases and corridors, and pretty much everything about a hospital is built first and foremost so that it can be thoroughly cleaned, so that

no dust or bacilli can possibly harbor anywhere. It will be evident, of course, that if dust is allowed to come in by way of the air current all the efforts of the architects, the designers of special coverings for walls and floors, and special methods of connecting walls and floors so as to offer no harbor for bacilli, will be neutralized. If, however, the same course is taken in building the ducts that is taken in the wards, and if in addition a perfect system of filtration is adopted, dust should be eliminated. It is, of course, not so easy to clean ducts as to clean wards, no matter how carefully the ducts may be laid. Ducts also, up to the present, the writer believes, have been built rectangular in section, and the corners would necessarily form harbors for dust and bacilli. The remedy would be, apparently, to build the ducts of an elliptical section, as sewers usually are, and to line them with materials that can be cleaned just as the walls of the wards are, and to eliminate all corners just as they are in the walls, and, above all, to have a rigidly carried out system of cleaning them. This all, of course, means a greater expense.

Placing an efficient filter in the path of the air current, though it materially assists in absorbing the dust, brings another factor into the problem involved in circulating the air through the system. At the Birmingham General Hospital, which is representative of the plenum system, the pressure provided for driving the air through the ducts is very small indeed, a fraction of an inch water gauge. One inch water gauge, it will be remembered, is rather more than ½ oz.—say rather more than 1/32 lb.—per square inch. This low pressure is only obtained by providing very large ducts, so that there is no appreciable resistance to the passage of air through them. The main duct, for instance, which carries the air from its first entrance into the hospital, is the subway common to all British hospitals, which constitutes a common way for workmen, and in which pipes, cables, etc., are fixed.

The subway at the Birmingham General Hospital is made rather larger than is usual in other hospitals, and as the plenum system itself makes it possible largely to do away with steam pipes, hot water pipes, etc., the air space is very large. The ducts leading to the wards are in proportion. The low pressure employed at the Birmingham General Hospital insures a very complete circulation of the air through the whole of the building without the slightest tendency to drafts of any kind. The building is entered by swing doors, which are continuously being opened and closed, and one can find no difference whatever in the air current or in the atmosphere when passing from a corridor to a ward or vice versa.

The filtering of the air is done outside the building; it is very efficiently done, but it seems to the writer that the air current passing through the subway and the other ducts is likely to lick up particles of dust and bacilli and carry them into the ward. Filters can be placed in the main duct, or in each duct, as is done at Leicester and elsewhere, but the addition of the filter requires an additional pressure to be given to the air current in order to overcome the resistance offered by the filter. At the Midland Hotel, Manchester, air is forced through the building under considerable pressure, filters being employed very largely, as is necessary in Manchester, and there are no perceptible drafts.

Another objection, and one which the writer believes has done more to prevent the adoption of the plenum system, not only in hospitals, but in public buildings generally, is the fact that apparently something is taken out of the air. Some years ago the present writer made a very careful investigation of the plenum system. Before entering upon it he wrote to several doctors and physicists, who had made a study of it, and one and all gave the reply that apparently "something was taken out of the air." When going over the Birmingham General Hospital the writer was allowed to discuss the matter with doctors, nurses, and the officials of the institution. When the plenum system was first introduced into the hospital the doctors' and nurses' quarters were also included. Both doctors and nurses complained that when sleeping in "plenum" air they arose in the morning, or after their period of rest, unrefreshed and stale, and so strong was the feeling against it that the use of the plenum system was discontinued in their quarters, ordinary natural ventilation and open fireplace heating being resumed. So strong also was the feeling against it that in the Belfast Hospital, which the architect of the Birmingham General Hospital afterwards designed, the doctors' and nurses' quarters were specially omitted from the plenum arrangement. Doctors at the Birmingham Infirmary told the writer they found that convalescents did not get on as rapidly as they would have done, say in a country hospital, or even in the heart of Birmingham exposed to the ordinary atmosphere.

On careful consideration it appeared to the writer that the cause of all the trouble, the staleness of the nurses and doctors after sleeping in "plenum" air, the slowness of convalescence in "plenum" air, was due to the temperature at which the air all over the hospital was kept. Very careful registers were kept of the temperature in each of the wards and at different portions of each ward; and the whole building was maintained at a temperature as close to 63° F. as possible. The writer's view, which he expressed in a medical journal at the time, and which he has expressed in other journals since at different times, is that the something taken out of the air is oxygen. It will be remembered that the volume of 1 lb. of air increases with the temperature and vice versa; or to put it in another way, the weight of air in 1 c. ft. decreases as the temperature rises, which means that at 63° F. those who are living or sleeping in it inspire a smaller weight of oxygen during 6, 8, or 24 hours, than if the temperature were lower. The writer believes that everyone's personal experience bears out the above. We all know that when it is possible for us, we are better, healthier and stronger the lower the temperature of the air in which we are living, and that this is particularly true in the air in which we sleep.

There seems to the writer to be no reason whatever why the air entering different wards should not be at different temperatures and different humidities; and that doctors and nurses should be able to sleep in air as cold as they please. The ideal would be for each nurse or doctor to have complete control of the air in the room in which he or she slept as to temperature and humidity.

At the Manchester School of Technology something of this kind is in operation. Two separate ducts are led to each classroom, one containing warm air and the other cooled air. A valve at the entry ports, under the control of the lecturer, causes more or less air from either duct to enter the room. A further extension of this, which the writer believes is also adopted in some institutions, is to have the valve controlled by a thermostat. When the temperature rises the thermostat partially closes the port admitting warmer air and partially opens that admitting cooled air and vice versa.

The system which has been fitted up at the Children's Hospital in Glasgow for the operating theaters there is perhaps worth noting. The air is heated by passing over a coil of pipe in which steam is circulating, the flow of steam being controlled by a diaphragm valve, which in its

turn is operated by compressed air by the aid of thermostats in the operating theater. The air passes through a gauze screen filter on its way to the heating coil, and in addition a pan of water is placed in the path of the air, another steam coil being placed in the water. The heat delivered by the steam coil to the water causes it to evaporate, and the rate of evaporation depends upon the temperature to which the water is raised, the temperature of the air passing over the pan of water, and the tension of the vapor arising from the water as opposed to that of the vapor already present in the air. The rate of evaporation of the water in the humidifying pan is controlled by a diaphragm valve fixed in the path of the steam flowing to the humidifying coil, and the diaphragm valve is itself controlled by humidistat in the operating theater.

Though the plenum system has not found favor in hospitals, the arrangements in many cases are a close approach to it. For some operating theaters, for instance, air is heated by being passed over special forms of radiators, and is carried thence to ducts near the floor line, leading to exhaust shafts, through which the air is forced out into the outer atmosphere by the aid of fans. The plenum system is also adopted for the out-patient department in many hospitals where it is not employed for the wards.

As between the remaining systems that have been described those most in favor are heating by steam below atmospheric pressure and heating by accelerated hot water. The arrangement mentioned above of radiators fixed under the windows with special louvred gratings in the wall against them, the radiators being either heated by steam or hot water, is largely the favorite for general ward heating. One point that should be noted in connection with hospital heating is that during recent years economy in heating has been very much more studied than in previous years.

It is the usual experience that when some new apparatus is introduced economy is not much studied. Later on, from various causes, economy is obliged to be studied. This has been the experience with power plants in connection with industrial work. When power was first introduced the advantages were so great that the cost of the power was not considered. Later on, when everyone had power and when competition was keen, the cost of the power came up for consideration.

In hospitals, now, all exhaust steam and all condensed water produced from heating apparatus and in steam pipes is carried away to what is called the "hot well" or the "feed tank." This is a tank, placed in any convenient position, from which the water to feed the boiler is taken.

In most hospitals, also, condensers are employed of various forms, very much on the lines of those described in connection with the Reck system, in which exhaust steam is used to assist to heat the water, either for the boilers or for the hot water service. Many hospitals also have fitted "economizers" to aid in heating the water for the boilers. The economizer is a device that was introduced into power service some years ago. It utilizes the waste heat in the hot gases from the boiler furnace to raise the temperature of the water that is to feed the boilers. Where exhaust steam is used for heating purposes it is necessary that the oil, which is always present, which is carried over with the steam from the steam cylinder, should be abstracted from it before it is allowed to enter heating appliances. Hence nearly all hospitals where exhaust steam is employed have also adopted oil separators. An oil separator is an apparatus in which the steam and oil are separated by subjecting them to certain motions, the separation being completed by the operation of gravity.

## HINTS FOR HOSPITAL SUPERINTENDENTS.

We have had something lately about inventory systems for the hospital. Such a system can be made extremely useful provided it is not carried out to a burdensome extent. It is impossible to keep a useful inventory of coal, ice, the day's food supply, such as vegetables and fruits; but not at all difficult and most useful to keep account of rubber gloves, thermometers, "hypos," water bottles, cotton and gauze and the many other commodities that must be purchased in quantities from time to time. Some hospitals keep an account of purchases and distribution of sugar, flour, potatoes and other standard food supplies. This is done by adding new purchases to the stock "on hand" in a book in which the articles are kept alphabetically. Distributions from the store room are made, in these articles, by pounds or bushels. A good form for such a stock book has been prepared; it can be kept as a book or preferably as a card index, with cards approximately six inches wide and four inches deep.

Thirty years ago it was customary in large hospitals to have an "officer of the day." The practice seems to have been abandoned, but it is again suggested by Doctor John R. Hicks, Director of the Port of New York, in a paper published elsewhere in THE MODERN HOSPITAL.

There is no doubt that the assigning of positions of trust to interns and the younger resident medical men gives them an interest in the hospital affairs that otherwise they would not have. It also helps them greatly in their training; and last, but by no means least, these young men very soon catch on to administrative routine practices, and can take a very large number of details off the shoulders of the administrator of the institution.

In hospitals so small that they have only two or three interns, the "officer of the day" might be the "officer of the week" and the officer might assume many of the details of management, especially in the medical service, admission of patients, and a vast amount of routine detail. This system ought to be more in vogue than it is.

There are many hospital superintendents who do not, as a routine practice, meet the public; they transact business through an assistant, a trustee, or a member of the medical staff. This is all wrong; your public is the most delicate factor with which you have to reckon; its members, when they call on you, are in trouble, are nervous, anxious, and impatient. You are superintendent of the hospital because you are supposed to have tact, diplomacy, patience, and a knowledge of hospital conditions, including the psychology or mental attitude of everybody concerned and every situation.

You can very often smooth out a tangle, calm a storm, and set things right by taking personal charge of an incident, and meeting the people in trouble. If an assistant could do it as well or better than you, he or she ought to have your job.

You say you are too busy to see the public? Yet you are working all the time at the particular job you think is the most important; is there any job more important than to see the public well served, and in a good humor with your institution?

Plans have been accepted for an addition to Mount St. Rose Hospital, St. Louis, to cost $150,000. This institution is devoted to the care of persons suffering from tuberculosis, both in the incipient and advanced stages of the disease.

# THE MODERN SANATORIUM

## The Sanatorium Today

BY ALBERT WARREN FERRIS, A. M., M. D.,
Saratoga Springs, N. Y., Superintending Director for the Commissioners of the State Reservation.

The term "sanatorium" or "sanitarium" has been as much abused as even the title "professor." It has been a euphemism for any shelter for chronic lunatics. It has been arrogated to itself by many a boarding house with rooms to let to the ailing or to the person whose ailment is a figment of the imagination. The Battle Creek Sanitarium claims to have been the first to use the term, and in its case the word meant, and still means, an establishment where natural methods and natural foods, hydrotherapy, electricity and mechanotherapy displace drugs and bad habits of living. The opprobrium attaching to the term sanatorium was, a few years ago, increased by the feeling that an institution bearing that name was more or less a refuge for incompetent or unsuccessful practitioners. This reputation has been outlived and this rumor has been met, not by changing the name, but by maintaining a high standard of excellence.

A patient goes to a sanatorium in order to live under the roof with his physician; to see him when he wants him; to have a feeling of confidence that comes with the certainty of swift medical relief should emergency arise. This close relation of patient and physician affords opportunity for the fullest examination, the most thorough study, and the choice and application of the best methods of treatment; and herein lies the basic idea of the sanatorium, if we add that clean air, green trees, abundance of sunlight, and the sense of freedom and restfulness that space brings must be provided to make our picture perfect.

The atmosphere of the hospital should be absent, although some sanatoriums embrace in the category of their facilities a separate hospital building. There should be few bedfast patients. The suggestion the patients get from each other should be one of improvement, of convalescence.

In its provision for daily living the establishment should approach the hotel in equipment, service and convenience. Yet it should preserve as far as possible the feeling of the home. Organization should be so tactful as not to be oppressive; hurry and bustle should be eliminated; and a spirit of cheerful friendliness should mark the relations between physicians and patients. The absence of apparent control beyond the day's routine, the prevention of unnecessary noise, the elimination of avoidable delays, and the removal of friction will combine to reassure the doubtful, to cheer the weary, and to calm the irritable.

But the great opportunity and prime value of the sanatorium lie in the provision and utilization of diagnostic facilities. Excellent chemical and physiological laboratories are essential. The patient should be weighed, measured, assayed, cupelled and tested in all ways, till the summary conveys an accurate and adequate conception of his deviation from the normal, his organic changes and his functional irregularities. It will indeed be surprising if physicians and physiological chemists in our best sanatoriums do not solve some important problems in metabolism.

The equipment for treatment must include hydrotherapeutic apparatus for administering sprays, jets, douches and affusions of all kinds; tubs for mineral, brine, oxygen and Nauheim style of baths; electro-thermal and electrochemical baths; a room for brine vapor inhalations, and one for radium emanation treatment; conveniences for colon irrigations, and for giving packs, fomentations and compresses; cabinets for hot air and for electric light baths; an electro-therapeutic department; a roentgen-ray department; adaptable tables for massage and the various rubs, or passive motions; Swedish or Zander style of vibratory apparatus; sparring bags; a gymnasium with full equipment, and outdoor and indoor swimming pools.

Statisticians of life insurance companies and directors of welfare work among factory mechanics, bank clerks and other large bodies of indoor workers, as well as commissioners of health in cities, all call attention to the startling amount of slowly disabling organic disease which is reducing the value of the unobserving citizen. The keynote of human activity today is efficiency. We must secure it, increase it and prolong it. With the concession of shorter hours, during recent years, comes the demand for concentration of attention, intensive effort, and continued efficiency.

Why does the formerly proficient brain or muscle worker become less efficient? Why does he suffer from early fatigue, itself an expression of disease? What has impaired the natural powers of nutrition, the natural immunity, the natural power of resistance? Is it because of food poisoning, or gradual drug poisoning—for tea and coffee, alcohol and tobacco are drugs? These questions the sanatorium must answer for the patient. It must prescribe the proper diet, exercise, rest, recreation and treatment. It must restore the patient as far as possible, teach him right living, provide him with rules for his future life, and adapt him to the environment to which he must return and which he probably can change but little. It must, in short, set itself to the task of life conservation and life extension. The conscientious physician in the honest sanatorium of today accepts as his office and duty the attempt "to render growth more perfect, life more vigorous, decay less rapid, and death more remote."

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An appropriation of $50,000 for an addition to the criminal insane ward at the state hospital at St. Peter, Minn., has lately become available, and it is planned to begin the construction of the building as soon as the necessary preliminary arrangements can be made.

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The proposed addition to the Silver Cross Hospital, Joliet, Ill., for which a fund is being raised, is to contain private rooms, an operating suite and a maternity department. Forty-four patients will be accommodated. The main building will be a four-story fireproof structure, 41x110 feet. There will be a separate power plant and laundry building. The total cost of construction is estimated at $80,000. Plans for the addition have been drawn by Architect C. W. Webster, Joliet.

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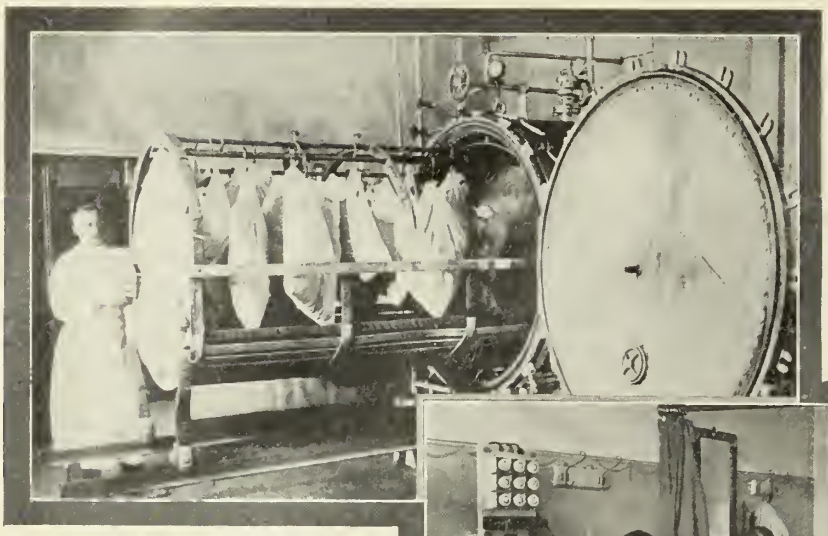
The Illinois State Nurses' Association has recently elected officers as follows: president, Miss Minnie Aherns, superintendent of infant welfare work in Chicago; first vice-president, Miss Elizabeth Asseltine, superintendent Ryburn Hospital, Ottawa; second vice-president, Mrs. Gertrude Kilby, Bloomington; treasurer, Miss Catherine Thompson, Chicago; secretary, Mrs. W. F. Bache, Chicago.



*Photograph from Underwood & Underwood, N. Y.*

Fig. 1. This is the disinfecting chamber of one of the leading hospitals in Petrograd. The photograph shows the clothing of some of the patients being placed in the huge cylinder.

*Photograph by Underwood & Underwood, N. Y.*

Fig. 2. Electric hot air apparatus used in treatment of stiff joints among German wounded.

*Photograph by Underwood & Underwood, N. Y.*

Fig. 3. Mechanotherapy in a German hospital—leg movements, foot turning, knee turning, and hip stretching.

*Photograph by Underwood & Underwood, N. Y.*

Fig. 4. Knee stretching and body stretching apparatus used for German wounded.

### Scenes from the Battlefields of Europe

While men have been killing each other, other men and women have been alleviating the sufferings of the hurt and fitting them to renew the fighting. Unfortunately the exigencies have prevented the world from obtaining the full value of medical and surgical improvements on the battlefields of Europe, and only after peace comes will it be possible to have the benefits of the marvelous achievements of the medical and nursing professions under the stress of necessity, for the benefit of the sick and hurt everywhere.

But a few scientific articles telling about surgical and

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Fig. 5. Scene in the beautiful open-air hospital of Mr. and Mrs. Astor at Clifden Hall. In the cots are some of the Canadians who saved the Allies' line at St. Julien.

*Copyright by Underwood & Underwood, N. Y.*

Fig. 6. English Red Cross nurses. At the left is Miss Muriel Thompson, who has been decorated by King Albert of Belgium personally for bravery in the field.

*Photograph Underwood & Underwood, N. Y.*

Fig. 7. Austrians disinfecting Russian wounded before they are taken to the hospital. While the men are being treated their clothing is also being disinfected in the boiler shown next to the tubs.

*Photograph Underwood & Underwood, N. Y.*

Fig. 8. The American Hospital at Neuilly.

nursing work have been published, and many thousands of photographs have been taken, showing scenes "somewhere in Europe," in which doctors and nurses and their aids are relieving the injured.

THE MODERN HOSPITAL has no desire to compete in illustration of these scenes with the popular magazines or the daily papers; but there are some very pertinent lessons to be learned by the hospital people in this country from some of these illustrations, and from time to time THE MODERN HOSPITAL will present a few of the most illuminating. A small installment of these pictures is presented herewith.

# PHILANTHROPY AND THE PUBLIC HEALTH

THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director,
*Department of Family Welfare.*
DONALD B. ARMSTRONG, M. D., Director.
*Department of Social Welfare.*

## A Constructive Program for the Health Supervision of School Children in New York State

BY EDWARD F. BROWN

Among some of the more prominent activities started by the Association, which have subsequently become separate entities, are, the New York Juvenile Asylum and the De Milt Dispensary, both of which were founded in 1851; the Northwestern Dispensary, founded in 1852 at a cost of $42,000; the Society for the Relief of Ruptured and Crippled, the establishment of public baths costing $28,000; Seaside Hospital, built at a cost of $250,000, and

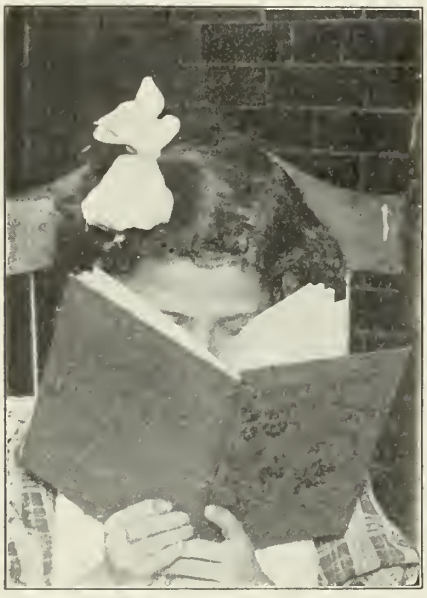

Fig. 1. Refractive errors in school children are a great handicap to study. Eye clinics and the provision of eye glasses for needy children remove the difficulty.

the Infants' Milk Stations. Members of the staff of the Association from time to time, in a semi-official capacity, represent the Association in the inauguration of public service activities of this sort.

With the aid of the Bureau of Welfare of School Children, there was organized in 1914, as a result of the state medical inspection law, The New York State Association of Medical Inspectors and Physical Educators. This organization has just held its second annual meeting. Its purpose is to weld the forces working towards an effective health program for school children, standardize the technic of school medical inspection, nursing services, etc. The Legislature last year had failed to provide ample funds for this work, which is under the State Medical Inspector of Schools of the Department of Education.

At the annual meeting of the Association of Medical Inspectors and Physical Educators of the State of New York held at Rochester on November 23, 1915, the Presi-

Fig. 2. Proper medical supervision and the provision of warm lunches at school reduce the malnutrition which is so widespread among school children.

dent was authorized to appoint a committee to wait upon His Excellency, Governor Charles S. Whitman, and the Honorable John H. Finley, Commissioner of Education, with a proposed program of work for the Division of School Medical Inspection for the year 1916, for which the Association is to urge the Legislature to provide funds in the budget which is now being prepared.

Fig. 3. Defective nasal breathing and hypertrophied tonsils constitute some of the main causes of backwardness in school work.

The committee has, pursuant to its commission, submitted the following program:

1. Survey systems of medical inspection in all districts of the state, subject to the medical inspection law.
2. Create an Advisory Council to the State Medical

Inspector consisting of the foremost school hygienists in the state to which to submit questions for advice and information.

3. Formulate standard schemes for
   a. School medical inspection.
   b. Sanitary school surveys.
   c. Nursing service.
   d. Clinical facilities.
   e. Educational hygiene.
   f. Forms and record keeping.

These schemes should be constructed in such a way that they may be adapted to the needs of different communities in the state.

4. Stimulate through a definite set of publications issued under the imprint of the State Department of Education a state-wide interest in school hygiene.

5. Develop a system of reporting to the State Medical Inspector concerning the health of school children in different communities in order to grade districts on a basis of the efficiency of the health care of children. When a community falls below a minimum standard, it would then become the duty of the State Medical Inspector to cooperate with the local authorities in bringing their health work of school children to a more adequate basis of efficiency.

Fig. 4. Clinics are needed for the operation and treatment of children suffering from tonsils and adenoids.

Fig. 5. Every community, every rural district should have its dental clinic for school children.

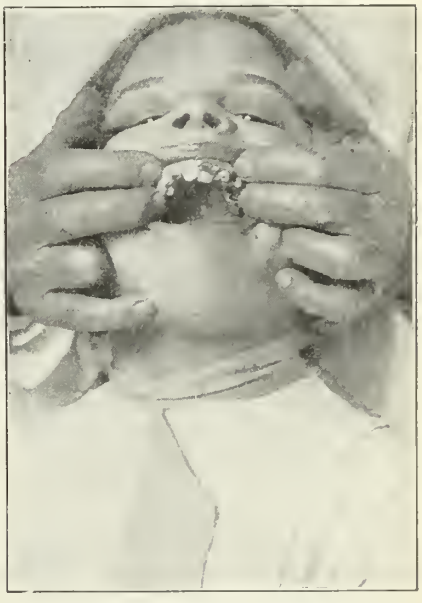

Fig. 6. Why dental inspection and dental clinics are needed.

The Medical Inspectors' Association has issued the following statement:

"We look with justified concern on the failure of the Legislature thus far to make adequate provision for the vitalization of the medical inspection law of the state. The medical inspection law covers children in all the districts of the state except cities of the first and second class.

"Whatever may be the merits of a program for a national defense, no step which did not contemplate intelligent and adequate provision for the health of school children would be well based.

"What is needed more than anything else is a comprehensive program of education. This can best be carried forward through the provision made by the medical inspection law which is under the jurisdiction of the State Department of Education. In order to do this, this department should have at its disposal at least $50,000 to start this work."

Plans approved for a new plant for the Sacramento County Hospital, Sacramento, Cal., call for an administration building, six wards and a service building, surrounding a court designed to be used for patients. The buildings are to be connected by a corridor running around the group, under which is a tunnel to be used for conveying food, laundry and all things which it is desired to keep out of sight. Sun rooms are planned for the rear of each of the wards, which are so arranged that they are complete in themselves. There will be a central kitchen in the service building, from which food will be supplied to the wards. The cost of the new hospital is estimated at $400,000. R. A. Herold, of Sacramento, is the architect.

# DEPARTMENT OF LIFE EXTENSION

Conducted by EUGENE L FISK, M. D.
*Director of Hygiene, Life Extension Institute, Inc.*
*25 West Forty-Fifth Street, New York City.*

## Preparedness That Makes for Prosperity

BY EUGENE L. FISK, M. D.,
Director of Hygiene Life Extension Institute, Inc., New York, N. Y.

Many of the brainiest and most patriotic of our citizens cannot agree as to the need for large armies, large navies, military instruction, and other measures that are included in thorough military preparedness in the strict sense of the word. Some are for large fleets, others for large armies, others for military training camps, or universal military service. Others are for none of these things, but hold that our best protection lies in a peaceful aspect and a general national policy of minding our own business. There is no lack of plans and methods to cover the possible needs of this country should a foreign enemy attack us.

There is no strictly military measure that does not involve some form of increased taxation, or other burden placed upon the mass of the people. Even in the short journey we have already taken toward technical military preparedness, we are confronted by a governmental estimate of an appropriation for army and navy in 1917 exceeding that of 1916 by $146,857,235. I do not contend that this is not a wise provision. This kind of preparedness is not the subject under discussion. But such figures serve to show what serious financial problems in revenue raising a thoroughgoing technical military preparedness creates.

With the merits of these various plans for army and navy preparedness, this article has nothing to do. Neither does it invite debate concerning them. There are, however, other measures of preparedness that would prove in every way helpful to the masses of our people, which are receiving but scant and superficial consideration. One of the lessons derived from the present war is the enormous value to a nation at war of industrial efficiency, of highly organized and smoothly working industrial machinery. Back of the firing line there lies the factory. A highly trained force of soldiers without this background of industrial organization and supply would be as ineffective for defense as an untrained mob or a herd of cattle.

We have seen a successful Russian offensive turned into a heart-breaking though heroic retreat largely because of industrial insufficiencies. No greater strain could be put upon the fortitude, the endurance, the morale of the troops in a defensive line than the knowledge that their equipment is inferior to that of the enemy, that behind them there is confusion in the councils of their government over questions of equipment and supply. What greater stimulus to endurance, as well as to *elan* and sustained offensive, could there be than a feeling of confidence that those at home are organized and sustaining their part of the burden; that heroic efforts to drive out the invader will not be halted for lack of mere machinery! There are many factors entering into the totality of industrial efficiency, using the term in its broadest sense, as connoting not only work well done, but a happy, contented and harmonious working force.

But there is one factor that is fundamental, that underlies all others relating to industrial organization and development, and that is health. So far as this may be governed by hygienic conditions in factories, such as light, ventilation, dust removal, safety devices, protection against metallic poisoning, etc., it may be said that the importance of this factor has not been underestimated during the past few years.

There has, however, been a failure fully to appreciate the importance of determining the quality of these industrial lives that are being brought under the influence of efficiency methods and scientific management of merely sanitary or emergency protection.

The condition of health of the worker places a certain limitation upon what can be accomplished with him in the way of improving his efficiency and his productivity, and maintaining him in discipline and loyalty to the service in which he is employed. Efficiency counts for little if it cannot be controlled and directed, if it cannot be continuously held above a certain level and kept operative. Is not industrial disharmony quite as serious a weakness in the offensive and defensive of war as would be an equal degree of military insubordination?

The value of methods adopted to protect the health of the worker cannot be measured alone by the reduction of the accident and sickness rate. Such reduction may afford concrete and forcible argument for the adoption of such methods. But the American habit of measuring everything in dollars and cents is not always a wise one. It causes us to overlook substantial benefits which cannot be so measured.

It was very gratifying recently to hear the medical director of a very large industrial plant state that in his company they did not think so much of the reduction in the accident liability that had followed their welfare and medical measures, as they did of the general atmosphere created in the plant—that of cooperation between employer and employee, of cheerful service.

It is gratifying to find that an occasional grouch among the employees, or an occasional petty tyrant among employers, cannot hold back this movement toward sane and harmonious working relationship between capital and labor.

As an element in preparedness, this is a factor of tremendous importance. Who can say what underlying condition of discontent, of factional strife, of disharmony and disorganization might be revealed and let loose to embarrass our defensive efforts should the cruel test of war be applied?

That this is no academic theory has been fully shown during the present war. Neither should it be regarded as an academic dream, in the event of our developing a highly organized industrial force, working in harmony with their employers, that an overwhelming superiority in this regard over foreign nations might not well prove as efficient a deterrent to foreign aggression as superiority in fleets and armies.

There is available an abundant supply of courageous men to defend our country—untrained, it is true; but the knowledge that all the modern machinery of war (using the term in a literal sense, for war is now largely a matter of machinery) could be made quickly available in the event of attack might well cause foreign nations to hesitate in attacking us.

It is not beyond the bounds of reason to formulate some plan whereby a highly organized development, along peaceful lines, might prove the best preventive of war, as well as the most efficient protection in the case of war.

That this should be the only defensive measure is not here maintained, but I do maintain most firmly that enormous expenditures for army and navy might easily be rendered useless by failure to create that industrial organization which must form the background for successful modern warfare.

The importance of this subject is emphasized by the knowledge that is daily accumulating regarding the mortality trend in this country and the condition of the health of industrial workers. Much evidence has lately accumulated to show that the average industrial worker is below par, taking par to mean a reasonable and attainable condition of physical soundness and efficiency.

So far as this is due to shop environment and insanitary surroundings in factories, there is a vigorous movement toward improvement. But there is need for greater interest in the matter of studying the physical condition of the worker—so far as it is due to heredity and general habits of living—to what degree he is physically adapted to this work, and the influence of his occupation, per se, apart from matters of sanitation.

In the work of the Life Extension Institute, it has been found that in any large group of workers, from 5 to 8 percent are seriously impaired. They have organic defects which require that serious consideration be given to the kind of work they are fitted to undertake. Rarely is an individual found whose condition cannot be improved by some hygienic suggestion, and more than half are affected with disabilities or impairments that place them far below their attainable condition of health and efficiency.

It is not enough to examine industrial workers prior to employment, although this is a very valuable measure. Also, it is not a wise or feasible plan to attempt to operate an industry solely with "gilt-edged" individuals; there are not enough of such individuals in a community to carry on any industry.

There are few who apply for employment who are not eligible for some type of work. The most important indication is to keep track of these workers, examine them periodically and assist them to improve their general condition.

An individual who is "gilt-edged" today may in the course of a few months become impaired and require attention. If his impairment is ascertained at an early stage, it may be corrected and the worker restored to his former sound condition—or at least further impairment may be checked.

The tremendous value, from an efficiency standpoint, of the constant influence of such a system on the mass of industrial workers cannot be questioned. Neither can its effect, in promoting happier conditions and more harmonious relations, be doubted, a result of even greater economic and social importance than increased productivity.

I have before referred to the mortality trend in this country. Some figures are here appended from official sources, which show the danger of lulling ourselves into a sense of security because of the fall in our general death rate.

There is no evidence that the expectation of life is increasing at all ages in this country, and there is much evidence to show that it is decreasing at those ages where life strain is chiefly reflected and where man should be at his prime as a worker. This increase of mortality from chronic disease has been taking place not solely among the pampered, luxurious classes, but among occupied males generally, as shown by the following tables:

COMPARISON OF EXPECTATIONS OF LIFE, NEW YORK CITY, ENGLAND AND WALES, AND LONDON

| Ages | New York City† 1909-1911 | | England and Wales* 1910-1912 | | London* 1911-1912 | |
|---|---|---|---|---|---|---|
| | Males | Females | Males | Females | Males | Females |
| At birth | 44.55 | 48.8 | 51.50 | 55.35 | ..... | ..... |
| 10 | 46.95 | 50.4 | 53.08 | 55.91 | ..... | ..... |
| 20 | 38.26 | 41.7 | 44.21 | 47.10 | 42.35 | 46.71 |
| 30 | 30.34 | 33.6 | 35.81 | 38.54 | 33.87 | 37.94 |
| 40 | 23.34 | 26.2 | 27.74 | 30.30 | 26.03 | 29.67 |
| 50 | 17.11 | 19.1 | 20.29 | 22.51 | 19.09 | 22.17 |
| 60 | 11.71 | 12.9 | 13.78 | 15.48 | 13.09 | 15.39 |
| 70 | 7.66 | 8.2 | 8.53 | 9.58 | 8.17 | 9.57 |
| 80 | 4.66 | 4.9 | 4.90 | 5.49 | 4.79 | 5.39 |
| 90 | 2.24 | 2.8 | 2.87 | 3.16 | 2.75 | 3.10 |

The above tables show, both among males and females, that the expectation of life is greater at every age period in England and Wales and in London than in New York.

*Supplement to the Seventy-Fifth Annual Report of the Registrar-General of Births, Deaths and Marriages in England and Wales. Part I—Life Tables, pp. 56-85.

†Annual Report, Department of Health, City of New York, 1912, pp. 176-177.

DEATH RATE PER 1,000 IN PRUSSIA BY AGE GROUPS 1875-80 TO 1901-1910

| Ages | 1875-1880* | | 1881-1890* | | 1891-1900* | | 1901-1910† | |
|---|---|---|---|---|---|---|---|---|
| | Males | Females | Males | Females | Males | Females | Males | Females |
| 1-2 | 71.8 | 69.1 | 70.2 | 68.0 | 58.0 | 55.5 | 45.3 | 43.1 |
| 2-3 | 37.1 | 36.1 | 36.3 | 34.6 | 24.7 | 23.8 | 16.5 | 16.0 |
| 3-5 | 22.2 | 21.7 | 20.8 | 20.7 | 14.2 | 13.9 | 8.9 | 8.8 |
| 5-10 | 9.3 | 9.2 | 8.8 | 9.0 | 5.9 | 6.1 | 4.2 | 4.4 |
| 10-15 | 3.9 | 4.3 | 3.8 | 4.3 | 2.9 | 3.3 | 2.4 | 2.7 |
| 15-20 | 5.1 | 4.6 | 4.8 | 4.5 | 4.3 | 3.8 | 4.0 | 3.6 |
| 20-25 | 7.7 | 6.3 | 7.0 | 5.8 | 6.0 | 5.1 | 5.2 | 4.6 |
| 25-30 | 8.6 | 8.2 | 7.6 | 7.5 | 6.1 | 6.1 | 5.3 | 5.5 |
| 30-40 | 10.9 | 10.3 | 10.6 | 9.7 | 8.3 | 7.9 | 7.0 | 6.7 |
| 40-50 | 16.7 | 12.3 | 16.3 | 11.7 | 14.3 | 10.0 | 12.5 | 8.6 |
| 50-60 | 27.6 | 20.7 | 26.9 | 19.8 | 24.2 | 17.5 | 23.5 | 16.0 |
| 60-70 | 53.0 | 46.3 | 51.4 | 44.8 | 48.7 | 42.0 | 45.5 | 37.4 |
| 70-80 | 113.3 | 106.2 | 110.2 | 113.9 | 102.5 | 97.1 | 100.6 | 102.0 |
| 80 & over. | 236.4 | 227.2 | 238.2 | 229.0 | 233.1 | 223.3 | 214.4 | 202.6 |

Note that in both sexes there was a steady and substantial decline in the death rate at all age periods of life during the last quarter of the nineteenth century.

*Koeniglich Statistisches Bureau in Berlin Preussische Statistik.* Hft. 184, p. iv. ff., Berlin.

†*Zeitschrift des Koeniglich Preussichen Statistichen Landesamts,* Berlin, 1912, p. xvii.

All of which emphasizes the need of giving attention to the health of our industrial classes as one of the fundamental factors in preparation either for war or peace.

To give more concrete expression to these suggestions there should be outlined in this country an industrial organization, in touch with the general government in such a way that the government would be able to tell at any moment—just as Von Moltke brought forth his plan of war when the hour struck—the exact facts regarding our industrial preparedness, our industrial machinery available for making munitions and supplies, and sustaining the battle line.

In other words, instead of waiting, as England did, until the war was far advanced to find out what her industrial resources were, and to organize them for victory in the face of industrial unrest and disaffection, we should know them in advance, and should have some kind of an organization perfected whereby we could quickly start in motion the vast and complicated machinery necessary to assemble and govern and guide this interior army without which the uniformed force on the fighting line would be mere helpless food for cannon.

That kind of a plan on paper would be of great value if it could count upon a stable, healthy and contented army of industrial workers. If it represented an unstable, and discontented army, below par physically, these deficiencies would be felt just as though they existed on the firing line.

With industrial organization and development moving along the lines of health improvement and physical well-being, recognizing these factors as fundamental to all

others making for efficiency, there would be put into action forces antagonistic to certain enervating and degenerative tendencies that in history have so often accompanied great cultural movements and industrial development.

The merit of this proposition of industrial preparedness, based upon industrial wellbeing, lies in the fact that it in no way interferes with the development of peaceful activities and lays no burden of taxation upon the people, but pays dividends in prosperity and happiness.

It is that kind of preparedness that is not a stimulus to war. On the contrary, it is a deterrent to war, because there is none of the false glamor of military glory surrounding industrial progress and achievement.

Economists differ as to the future of business in the years following the close of the present war, but assuming that there will be an era of industrial progress and activity in the fortunate land where the brain and sinew of the nation have not been shattered and destroyed, it behooves those who would guide that nation to give thought to the lines along which these industrial activities may be urged.

The value of studying and improving the physical condition of the workers, because of a possible need to place those of fighting age on the firing line, is another phase of the subject which should be considered, although this takes us beyond the limits of industrial preparedness which forms the subject of this paper.

That much is being done through the Government to study and to improve industrial conditions as related to health is well known, but they are the normal and leisurely activities that accompany the development of any civilized government. This subject of industrial preparedness, built upon the foundation of industrial wellbeing and contentment, is one of acute and pressing importance, not secondary to that of military preparedness per se.

The weight of enthusiasm of patriotism and statesmanship and organizing ability that is being thrown into the scale for armanent and military training should be thrown with equal force in favor of industrial preparedness.

There is such a thing as being too busy, as well as too proud, to fight. To the man busily at work fighting seems puerile and senseless; but the power to work sounds a note of warning that the power to fight—and what is more, the power to endure—is there.

Dr. Richard H. Hutchings, superintendent of the St. Lawrence State Hospital, Ogdensburg, N. Y., announces that steps have been taken to provide free mental dispensaries in various cities and villages in the St. Lawrence Hospital district, where free consultation, advice and treatment will be given by a mental specialist from the hospital staff to persons threatened with a mental breakdown or suffering from mental trouble. This movement is in line with recommendations of the New York State Commission, and is expected to be taken up by the other state hospitals. It is believed that by earlier discovery and treatment of mental disease many cases that would otherwise become chronic may be cured in the incipient stage.

Dr. John A. Pringle has been appointed superintendent of the St. Louis City Hospital, after receiving the highest award in a civil service examination held to fill the vacancy caused by the resignation of the former superintendent, Mr. Frank E. Chapman, who went to Cleveland, O., to take charge of the new Jewish Hospital in that city. Dr. Pringle is 28 years of age. He entered the St. Louis City Hospital not quite five years ago, as an intern, and gradually worked his way up to the head of the department of nervous and mental diseases, which position he held at the time of Mr. Chapman's resignation. He is a graduate of Washington University Medical School.

# SOCIAL HYGIENE
## VENEREAL DISEASES

Conducted by WILLIAM F. SNOW, M. D.,
*General Secretary, The American Social Hygiene Association,*
*105 West Fortieth Street, New York City.*

### The Genito-Urinary Department of the Brooklyn Hospital Dispensary

The genito-urinary department of the Brooklyn Hospital Dispensary was established in 1904. Its growth has been gradual and progressive, from one doctor attending two days in the week to thirteen doctors attending six afternoons and six evenings in the week. The organization is very simple in its component parts and can be shown in graphic form, each division being the same in all details. The chief of the department is the visible head of all work. To the patient he is consultant and to the staff he is instructor and critic. The day and evening clinics are directed by the same chief, so that each division becomes a distinctly separate unit in all details—staff, history file, contact with patient, etc. The afternoon service is free, except for fees of ten cents per visit, but for the evening service a charge of one dollar per visit is made, covering both treatment and medicine. The two divisions of the staff attend on alternate days, the same division being present both afternoon and evening on any day. This arrangement has been made in order to correlate as far as possible the free and pay services, so that patients whose circumstances lead to a change from one clinic to the other may remain under the care of the same physician.

The following simple rules have tended toward a distinct uniformity of method:

#### THE BROOKLYN HOSPITAL DISPENSARY

GENITO-URINARY DEPARTMENT

The full clinical staff shall consist of:

A chief of clinic, consultant.

A chief of division, director.

Clinical assistants, who shall rotate in service as follows: First, one month in laboratory; second, one month at history desk; third, in treatment rooms.

All treatment is to be controlled by the chief of division and by the historian.

All cases referred by the department of health and other sources must be acknowledged by the historian on the day of admission.

All cases must be entered in the journal of contagious diseases on day of diagnosis.

How the patient learned of this clinic should be ascertained and entered on the history sheet.

SYPHILIS

Full physical examination on first visit.

Wassermann reaction on all cases at beginning of treatment.

Wassermann reaction on all cases every tenth visit.

All cases diagnosed as chancroid must have a Wassermann test performed before being discharged.

GONORRHEA AND COMPLICATIONS

General examination at first visit, including a smear when possible.

Meatus smears should be taken at least once a month while there is a urethral discharge.

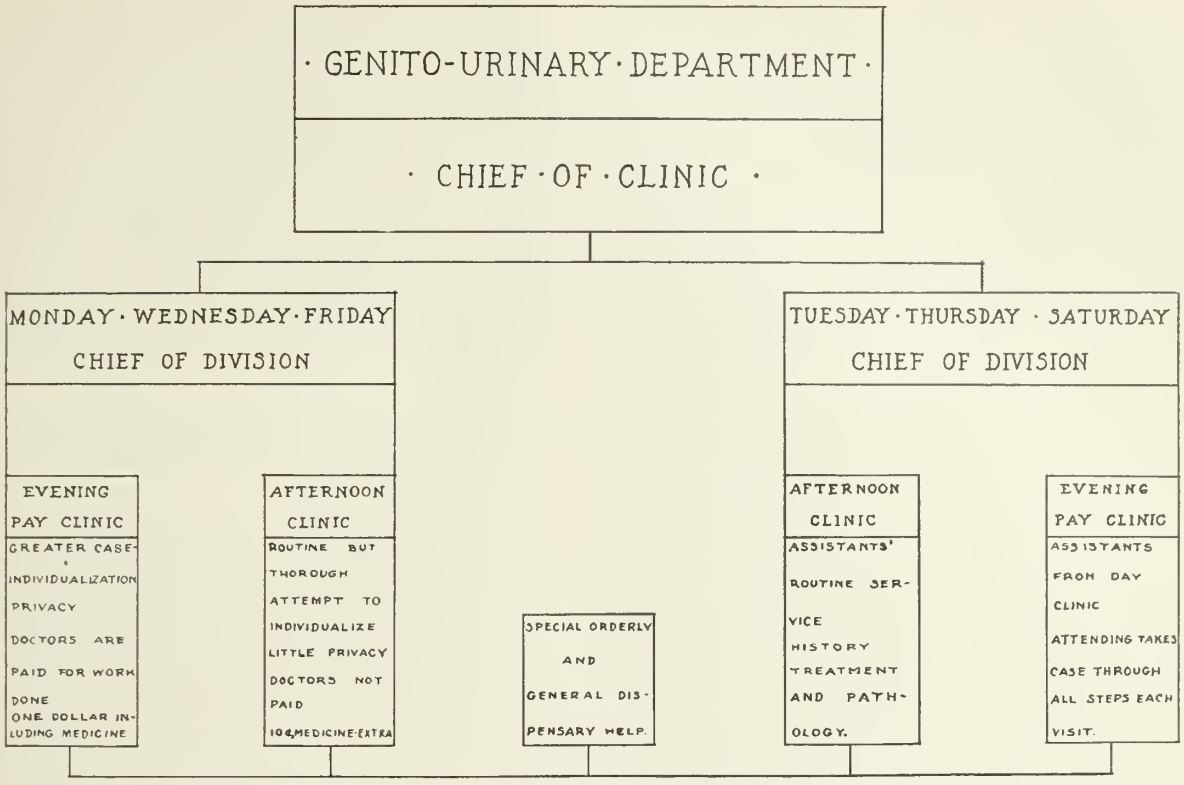


Fig. 1. Organization of the Genito-urinary Department of the Brooklyn Hospital Dispensary.

There should be a complete urethral and prostatic examination at the termination of acute symptoms.

Before being discharged as cured a patient's history must show at least three negative, monthly prostatic smears, a negative complement fixation test for gonococcus infection, a clinical cure, and a reexamination of the urethra.

Prostatic cases must have a smear of the expressed prostatic contents examined once a month, or oftener.

The printed history sheet should be completed in every case before discharge.

N. P. RATHBUN, M. D.,
Chief of Clinic.

These rules, as well as the requirements for the genito-urinary clinics, as adopted by the New York City associated out-patient clinics, are posted over the historian's desk.

When the patient, in his turn, enters the history room a complete history is taken, if it is the first visit, or the history reviewed, if it be a subsequent visit. At each visit the patient's story is noted by the historian and the required examination and treatment ordered by the chief of division. These orders are carried out in the treatment rooms and the results reported to and recorded by the historian, who then gives any necessary prescription.

The object in organizing a venereal clinic is twofold: (1) The proper treatment of the patients and the prevention so far as possible of reinfections and spread of the diseases to others; (2) the scientific study of the venereal diseases, the investigation and elaboration of methods for their treatment, and the training of workers in this branch of medical science. The clinic effectively operating on this basis becomes a valuable factor in the education and protection of the public.

The protection of the public demands the greatest obtainable control over the infected individual. This we endeavor to maintain by various methods. In order to keep control of cases until they are no longer a menace to the community we feel that something must be done to regain our control if the patient ceases attendance before being discharged as cured. To do this in the usual manner of social service work is obviously difficult. Personal visitation is not practical unless under the direction of unusually qualified and tactful persons. In addition it is expensive. The use of a card, requesting a return visit, is simple, of modest cost, and, in our experience, efficient. The card reads as follows:

BROOKLYN HOSPITAL DISPENSARY
*Genito-Urinary Department*
Raymond Street and DeKalb Avenue
Brooklyn, N. Y.

Mr..... .....
..... G-U No.....
You are requested to return on or before.....
You were not cured at your last visit.
You need further treatment or observation.
For your own good and the protection of others this card is sent you.
Kindly answer this notice.
If you do not return you will lose your privilege.
Clinic Hours: 1-2 p. m. Pay Clinic Hours: 5-6:30 p. m.
Tuesdays, Thursdays and Saturdays. Except Holidays.

....., M. D.

When the third card is sent to a patient it is stamped "YOUR LAST CHANCE." Frequently this does the work. We believe we have proved the value of this method during a six months' trial period. This sending of cards is not the very difficult procedure that it might appear. It takes but very little time and by means of a chart, upon which all visits are recorded, the historian can tell at a glance the status of all the cases in the active file. We have met with a very gratifying response to these cards in other ways than by revisits. We have had news of patients through friends, by telephone, and by mail. It is a remarkable fact that we have received not more than a dozen complaints in the ten months that this method has been in operation.

Each new case admitted to the department is presented with a copy of a ten-page pamphlet. The effort to drive

home our message by accent type, short sentences, common language, and the general arrangement has overshadowed any attempt at literary style. Translations of the pamphlet into Italian, Yiddish, and German now are being made. In addition to our own pamphlet the New York City Department of Health pamphlet on venereal diseases is distributed. During the course of a patient's treatment the Department of Health card on gonorrhea or syphilis is given and is a useful therapeutic measure. The patient must be inoculated with the stick-to-it-until-you-are-well idea. To do this demands constant advice and encouragement. The staff is urged to talk the idea. The door from the waiting room into the history room has a sign upon it, which greets the patient each visit with the information:

YOU MUST COME TO THE CLINIC REGULARLY FOR TREATMENT

| If You Have a Green Card [Green Card] | If You Have a Yellow Card [Yellow Card] |
|---|---|
| Come Every Wednesday For Syphilis | Come Every Thursday For Syphilis |
| Come Every Monday and Friday For Gonorrhea | Come Every Tuesday and Saturday For Gonorrhea |

DO NOT STOP TREATMENT UNTIL THE DOCTOR TELLS YOU THAT YOU ARE WELL

Variety is essential and change draws attention. A bulletin board 26 inches by 34 inches is therefore maintained in the waiting room. The basic matter upon it is always the same, but it is variously presented. The arrangement is under three general headings—Prevention, Syphilis, Gonorrhea. The notices posted under these headings are in various shapes, colors, types, and wordings. They are changed weekly and they are usually in easily understood and sometimes in common parlance. Under Prevention such signs as these are posted:

| | |
|---|---|
| BOOZE<br>is your worst enemy<br>NOT A DROP OF LIQUOR | AVOID<br>SEXUAL EXCITEMENT |
| WATER<br>is your best friend<br>USE IT FOR DRINKING AND FOR WASHING | CUT OUT<br>SEXUAL INTERCOURSE |

Under the disease titles there are frequently posted the instruction sheets of other clinics than our own and of other departments of health than the New York City department.

In addition to the board itself we have two frames for notices which are hung on either side of the board. One is permanent and one is changed at intervals. The permanent notice reads:

THIS CLINIC WANTS TO HELP MEN
WE HAVE A PAMPHLET

EVERY PATIENT COMING HERE IS ENTITLED TO HAVE A COPY. THE DOCTOR WILL BE GLAD TO GIVE YOU AN EXTRA COPY IF YOU HAVE A FRIEND IN NEED OF HELP. SPEAK TO HIM.

IN RETURN FOR WHAT WE ARE DOING FOR YOU ALL WE ASK IS THAT YOU STAY UNDER TREATMENT UNTIL YOU ARE WELL; THAT YOU DO AS THE DOCTOR TELLS YOU; THAT YOU DO YOUR PART IN KEEPING THE CLINIC ROOMS CLEAN AND OBEY THE RULES OF THE DISPENSARY.

The notices to be changed cover hygienic points, such as care of the teeth, cleanliness, diet, etc. It has seemed to us that cooperation with other bodies striving in the same field but with different parts of the work is the road leading to the greatest degree of success. Invasion of the domain of quackery by the department of health had been successful. We, therefore, with the cooperation of the Committee of Fourteen of New York City, offered to place the board of health sign plates in the saloon toilets in our territory. These plates as finally prepared read as follows (the department plate is blue and white and the hospital plate red and white):

VENEREAL DISEASES
CONFIDENTIAL ADVICE
REGARDING
GONORRHOEA, SYPHILIS
AND
SEX DISEASE
CAN BE OBTAINED
FREE
AT THE
DEPARTMENT OF HEALTH
29 THIRD AVENUE
9 A. M. TO 12 M. DAILY
SUNDAYS AND HOLIDAYS EXCEPTED

AVOID
ADVERTISING SPECIALISTS
AND PATENT MEDICINES

BROOKLYN HOSPITAL
RAYMOND STREET AND DEKALB AVENUE
MAINTAINS A CLINIC
FOR
THE TREATMENT OF MEN
UNABLE TO AFFORD THE
SERVICES OF A PRIVATE
PHYSICIAN

DISEASES OF MEN
DISPENSARY HOURS[1]
1 TO 2 P. M.

EVENING PAY CLINIC HOURS
5 to 6:30 P. M.
A FEE OF $1.00 IS CHARGED,
WHICH INCLUDES MEDICINE AND TREATMENT

DAILY EXCEPT SUNDAYS
AND HOLIDAYS

[1]The dispensary hours, 1 to 2 P. M., are for the patients who cannot afford to pay a fee.

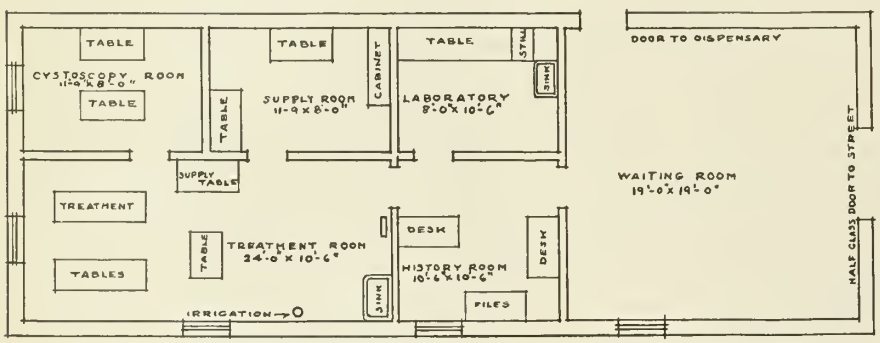


Fig. 2. Plan of the Genito-urinary Department of the Brooklyn Hospital Dispensary.

It is, as yet, too early to know what the result of this work will be. Thus far we have not experienced the criticism which some believed would follow. When our signs go up the quack signs come down! Cooperation with other societies, such as The American Social Hygiene Association, the Society for Sanitary and Moral Prophylaxis, of New York, as well as with business organizations in the territory about the institution, has been and will be of great value to us and to the community.

What does all this cost in time, in money, in energy? This we do not know, absolutely. In energy, it costs a great deal, but the return is ample. In time, our clinic work actually calls for an average of an hour and a half in the afternoon and two hours in the evening. The staff has to devote some time to the work out of hours, and this has been considerable during the organization period. In money, the cost of printing 5,000 booklets, 2,000 cards, 2,000 envelopes, 1,000 metal sign plates, totaled $125.

The cost of maintaining the clinic during the three months—August, September and October—had been approximately $465 for salaries and drugs. Rent, heat, light, instruments and repairs, and the usual incidental expenses of maintaining a general dispensary must be added, but do not constitute a large item and are partly covered by the excess of receipts over the combined outlay for salaries and drugs. The receipts from the patients for the same period have been:

| | |
|---|---|
| Admission fee of 10 cents (day clinic) | $120 |
| Charges for prescriptions (day clinic) | 96 |
| Fees from pay clinics (this fee covers medicine and treatment) | 450 |

No work such as this article has outlined can be judged without the passing of time. The question of pay clinics in the special branches of medicine and surgery is a vital topic that is in its infancy. Some adequate facility must be provided for each group of our population in need of special attention, including the small wage earner.

# INSTITUTION LIBRARIES

### Institution Libraries League

Through the kindness and interest of the editor of THE MODERN HOSPITAL the Institution Libraries League has been offered a page in each issue, to be devoted to institutional library work.

This is what we have been striving for—some of us—for several years: official recognition of the importance to the whole hospital of a well-selected, organized and systematized library; and it is needless to say that the committee on institution libraries is very grateful, not only to THE MODERN HOSPITAL, but also to those hospital superintendents and other physicians who have been so cordial in their reception of this committee and in their endorsement of its work.

Now some of us have been in this work ten years or more. We have seen one hospital after another detach itself from the old shelf-and-book number and Sunday-school-and-attic-refuse class of reading, and branch out into centralized libraries with new books. Two states, Iowa and Minnesota, have library organizers, trained librarians appointed by the Board of Control in each state, whose sole business it is to develop practical libraries in all its state institutions; another state, Nebraska, has such an institution library organizer appointed by the State Library Commission. One very well-known alienist, for years connected with state and private hospitals in New York, visiting McLean Hospital in November, said that the influence of some of these libraries was becoming greatly apparent; that in his earlier state hospital experience, the libraries were the dullest, dreariest, most unusable collection of books that could be imagined, with no effort to interest patients in reading, make the rooms attractive, or to buy new books; that, however, all this is passing and the hospitals are waking up to the importance of the library. He heartily endorsed the efforts we are making for experienced librarians and organized libraries. Truly, things *are* moving, though sometimes the progress has seemed very slow. What can we do to hasten matters?

#### OUR SLOGAN

Library efficiency is what we all are aiming at. How can we best achieve it? Without exception, every hospital which has a thoroughly successful library is convinced that three things are essential: first, an experienced librarian, trained in the necessary technic; either one in each hospital or one efficient organizer and teacher for the state. Second, a classified and catalogued central library. Third, a definite annual appropriation, however small, for the purchase of carefully selected new books. These three essentials we are going to emphasize and keep before the minds of the hospital authorities.

The first essential, which, in a manner, includes the second, few hospitals have at present. May we not help you to find a librarian suited to your needs? We know the library schools and the college bureaus of occupations; we will be glad of the opportunity to put you in touch with them. But if you are not able, for the present, to branch out so far as this, may we not help the untrained librarian who has charge of your books to a working knowledge of cataloguing and classification? A certain amount of machinery is necessary to any organization, and a machinist who knows how to use it.

S. O. S.

In return, we want your help. Let us confess it frankly—we are absolutely new to editorial work, and we do want to make this page a success—a real, practical help, an exchange of ideas, a mutual benefit association. Please tell us what you would like to find in this page.

Do you care for the book reviews? Then send us titles of some of the books your patients are particularly enjoying. Would you like a question box? Simple rules for cataloguing? A simplified classification in any department? Hints for charging systems? Help in the medical library? Bits of library gossip? Please let us know what you want.

We are planning a series of brief histories of certain movements, such as that of the state institution library organizers, and the development of some of the best hospital libraries in the country. Let us have an outline of the history of your library.

Then we want reports of your library for the year 1915: how many patients you have who read; how many books you have; how many you gave out; how much you spent for new books; and especially any little, personal, intimate items of your library; how you make your rooms attractive; whether you are getting your nurses interested in books, etc. You will make us very grateful if you will send questions, items or suggestions by the end of each month to Miss Jones, McLean Hospital, Waverley, Mass.

#### LIBRARY NOTES

Dr. William A. White, Superintendent of the Government Hospital for the Insane, Washington, D. C., writes of the League as follows: "Such a league should prove of great mutual benefit to the institutions comprising it. We have two libraries—the medical library and general circulating library. The latter has for its purpose the provision of good reading matter for the patients. These libraries are in charge of a librarian, who is assisted in the circulating department by a patient who has been interested in the work for some time and is very efficient."

At Bloomingdale Hospital, White Plains, N. Y., the librarian leads the hospital orchestra and choir in addition to her other work. They have a very good medical library in a pleasant room, and hope soon to move their ward books to the Administration House and have a central library. Miss Natalie Ashley, who resigned last summer, did some very excellent work here, which is being carried on by Miss Eliza A. Stearns, a Mt. Holyoke College graduate. Miss Stearns is about to classify their collection preparatory to moving it, and would be glad to hear from anyone who has any suggestions to offer. This hospital has an adequate book fund, and, therefore, a growing library.

Mr. Bernard F. Dromgoole, librarian at the State Tuberculosis Sanitarium, Carlsbad, Tom Green county, Texas, would like to be put into communication with others in the work of organizing and building up libraries in hospitals of this sort. Have other tuberculosis sanatoriums found it possible to have books, or do they confine themselves to magazines, which may be burned?

Rochester State Hospital, Rochester, N. Y., is about to purchase new books for its library. Mrs. Lester Ford, the librarian, asks for titles of books which have "hit the mark."

Miss Florence Waugh, formerly librarian for the State Institutions of Nebraska, was married in October. Her work will be carried on by Miss Nellie Williams, who has made an enviable record as a librarian.

Kalamazoo State Hospital, Michigan, is about to reorganize its library. There are 1,500 volumes in the collection, and the librarian, Mr. William C. Brigham, expects to classify them and put in a charging system of book cards and pockets. Mr. Brigham would be glad of any suggestions.

At Fergus Falls State Hospital in Minnesota plans are taking shape for removing the library to a large room to be used for library purposes only. The necessary equipment for a reading room will be added.

Miss Lucile E. Townsend has recently accepted a position in the State Hospital for Crippled Children at St. Paul, Minnesota. One of her duties will be the care of the library, for which her long experience in such work at Tarrytown, N. Y., makes her well fitted.

Will those connected with hospitals and homes for children send us lists of proved and approved books for the little ones to be published here?

One of our hospital librarians has written to Miss Carey asking for titles of books to read aloud. With all due modesty, we mention that an article on this subject is scheduled to appear in the January number of *The Nurse*, and reprints may be obtained from Miss Jones.

### SOME OF THE NOVEMBER BOOKS

November and December are not very good months for books, as the publishers are busy getting out holiday editions. Moreover, the hospital and library appropriations are apt to run low about this time. For these two reasons this list is short, but it comprises three unusually good books, which should have been bought earlier, but were overlooked. One of these is *His German Wife*, by Douglas Sladen; a story of the outbreak of the war, which interrupts the honeymoon of an English army officer and his German bride on a visit to her relatives. The description of their escape from Germany and adventures in Holland are thrilling; there is no race hatred in the story, and a great deal of humor.

*Eve Dorre*, by Mrs. Strother, the second of these belated stories, is thoroughly delightful, with a dainty and charming little heroine and a capital bit of character drawing in her mother; the French setting, too, is most convincing.

The third of these books—*Why, Theodora!* by Miss MacConnell, I confess I turned from several times because I did not like the looks of the paper cover with its drawings of some ten or a dozen detached heads in all stages of shocked mirth. This cover, with the title, gives one the idea of cheap sensationalism, which the book itself does not warrant. Not since Mrs. Mary Heaton Vorse wrote *Heart's Country* has there been such a tender, sympathetic, thoroughly understanding story of those difficult years in a young girl's life when school is finished and she is waiting for life—life which is so slow in coming!—and love, which, to Theodora, comes not in the radiant, hero guise of her dreams, but with drooping wings trailing in the very sordid dust. Theodora is a dear.

Sinclair Lewis' *The Trail of the Hawk* is another story well worth while and out of the ordinary. The Hawk is a boy blest with imagination; he seeks romance and adventure and finds both in the excitements of aviation, in which he becomes one of the professionals—hence his name. There is a very pretty love story in this. Miss Johnston's new book, *The Fortunes of Garin*, is full of the color and incident of the Provence Courts of Love and the feuds of the end of the Middle Ages. *Hempfield*, by David Grayson, contains much quiet humor and, like his other books, shows the romance that lurks even in the dullest country village.

*Moonbeams from the Larger Lunacy* is another of Stephen Leacock's deliciously funny effusions, no more to be analyzed than the taste of olives; if you like them, you do, and if you don't, you don't. *Dear Enemy*, in which Jean Webster carries on some of the characters of *Daddy-Long-Legs* and the John Grier Home, is a thoroughly enjoyable book, which we cannot, however, recommend for patients in the hospitals for mental diseases; there is too much about heredity, insanity and alcoholism, and consequent feeble-mindedness. It is too late to inculcate the principles of eugenics into such patients, and their feelings are harrowed enough, anyway. But as a book for well people it is charming.

In *The Gray Dawn*, Stewart Edward White continues the story of San Francisco which he began in *Gold*. In some ways this second book is a disappointment, until one grasps the idea that his characters are, most of them, simply types of the time, or puppets on which to hang the clothes and the manners of the period; that the city itself is his hero and heroine and the whole book.

*Sunlight Patch*, by Credo Harris, is a tale of the Kentucky mountaineer seeking an education, which is "different." There is much humor and keen insight in Mr. Harris's delineations of the old darky servants, while Dale himself is a masterly-drawn sketch of a supreme egotist who thinks he is a superman.

One approaches Mrs. Andrews' story of the war—*The Three Things*—with something of the reverence which attaches to her story of Lincoln in *The Perfect Tribute*. In this latest book of hers, which is only a short story, the hero, with all of youth's enthusiasms and intolerances, rushes to France to fight on the side of the allies. Here in the trenches and in the hospital, he learns the snobbery of his three great prides—pride of class, pride of race and pride of intellect which, to him, means atheism—and he comes home with a shattered leg but a truer manhood.

Baroness Orczy has written a new Napoleon story in *The Bronze Eagle*, which, I am told, is breathlessly interesting and a sort of sequel to *The Scarlet Pimpernel*. Those who have enjoyed Richard Pryce's previous books, *Christopher* and *Jezebel*, will welcome this new one, *David Penstephen*. Mr. Pryce's novels belong to a high order of literature and of clean, wholesome stories. David is no less charming than Christopher.

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A new home for St. Joseph's Hospital, Stockton, Cal., erected at a cost of nearly $100,000, has just been opened. The building is a two-story and basement structure, with a roof garden to which a $3,000 automatic elevator runs. The floor plan was laid out in four wings with the idea of obtaining the maximum amount of sunlight and fresh air. The mission type of architecture has been followed. There are six sun porches, having terrazzo floors and copper-screened duplex windows. These windows are used throughout the building. The fifty-eight rooms have sanitary enameled walls and double-acting silent doors. Eighty-five patients will be accommodated.

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Miss Mary A. Bowen, superintendent of the Ann May Memorial Hospital at Spring Lake, N. J., for a year and a half, resigned that post early in the fall and spent several weeks touring the West, including a visit to the Panama-Pacific Exposition at San Francisco. Miss Bowen has recently taken up her residence with the Sisters of Mercy at Merion, Pa., preparatory to taking charge of the new Misericordiae Hospital in West Philadelphia, when it is opened in the near future. She is a graduate of Bellvue Hospital, New York City, and has had wide experience in hospital work. Miss Bowen was succeeded at the Spring Lake hospital by Mrs. May Green, R. N.

# PREVENTION OF BLINDNESS — MATERNITY

*Conducted by* CAROLYN CONANT VAN BLARCOM, R. N.,
*Secretary National Committee for the Prevention of Blindness;*
*Chairman Committee on Prevention of Blindness and*
*Midwives National Organization for Public Health*
*Nursing.*

## Notes from Various States on the Prevention of Blindness

It is believed that readers of THE MODERN HOSPITAL will find it interesting to survey the present activities for the prevention of blindness which are being developed in various states throughout the country through investigation, legislation and widespread education. It is encouraging to the associations and state commissions which labor for this cause to note the increasing emphasis put on the popular presentations of the subject of prevention of blindness by the medical profession at their own and other meetings. Although a certain amount of legislation is necessary for the satisfactory prosecution of this phase of public health work, the movement as a whole rests upon a foundation of public education. Accordingly, it is gratifying to observe the rapidity with which this aspect of the work is developing.

### ARKANSAS

This state has provided through its legislature a special appropriation to the School for the Blind for the purpose of spreading knowledge concerning the prevention of blindness. As a first step in this campaign of education, Superintendent John H. Hinemon has circulated 10,000 copies of a publication entitled "Needlessly Blind for Life," prepared by the New York State Committee for the Prevention of Blindness. He is also arranging to run educational matter in the country papers, by means of which at least one-third of the population of the state will be reached.

As trachoma is the principal cause of blindness among pupils in the Arkansas School for the Blind, special effort is being made to eradicate this disease from the state. An eight-page leaflet written by Dr. John G. Watkins, oculist and aurist to the school, describing the disease and giving general directions for prophylaxis and treatment, has been issued and is being widely distributed. Trachoma is now reportable in Arkansas.

### CALIFORNIA

The ophthalmia neonatorum bill introduced by Senator Jones in the California legislature was passed and became a law by the signature of the governor early in June, 1915. The act provides for the definition of ophthalmia neonatorum, the reporting of it within twenty-four hours of its occurrence, and certain measures of prevention to be taken by the local health officer and the state board of health. The interests of this bill were in the hands of Dr. Glaser, of the state board of health.

The California legislature has also passed a vital statistics law, providing for the inclusion on the birth certificate of the question: "Was a prophylactic for ophthalmia neonatorum used? If so, what?"

The California Committee for the Prevention of Blindness, which is undertaking active work, has recently purchased from the National Committee fifteen exhibit panels dealing with the subjects of babies' sore eyes, midwives and wood alcohol.

### ILLINOIS

The state health department has been provided with an appropriation, making possible the free distribution of silver nitrate outfits. In sending out a notice relative to these outfits the secretary of the state board of health says: "Attendants at births may secure these packages without cost, provided that they report all births attended by them, as required by law."

During the last session of the legislature the public health law was amended in such a manner as to provide for a more effective system of control of babies' sore eyes than was possible under the old statutes. The present law defines ophthalmia neonatorum as inflammation, swelling and redness of either or both eyes of the infant, either apart from or together with any unusual discharge of the eye or eyes at any time within two weeks after birth, regardless of the nature of the infection. The law further requires that such inflammation of the eyes shall be reported within six hours from the time when first seen.

A number of new laws have been passed which are directed toward accident prevention. The most important of these is the Workmen's Compensation Act. This is a comprehensive law, providing and specifying the minimum sum which shall be paid in the event of death or injury of the employee and defining the responsibility of the employer, amending the Acts of 1911 and 1913. While this law is of special interest from a social and industrial standpoint, it is also expected that it will increase the precautions taken against industrial injuries, many of which are to the eye.

### INDIANA

During the last session of the legislature a law was enacted creating a commission for the blind, to concern itself with the industrial training and aid for the adult blind and also the prevention of needless blindness. The board of trustees of the State School for the Blind was appointed as the commission, and it will work in cooperation with the state board of health.

The Extension Division of Indiana University, in cooperation with the state board of health and numerous other organizations, has held two child welfare exhibits this year—at Indianapolis, February 13-26, and Evansville, April 20-28. At both of these exhibits a number of charts were displayed dealing with the prevention of blindness. The Indiana Society of Ophthalmologists had a booth and conducted a clinic, testing the eyes of a large number of children and consulting with the parents concerning treatment or correction.

### KENTUCKY

The most serious problem confronting the Kentucky Society for the Prevention of Blindness is the control of trachoma, which is widely prevalent in the mountainous districts. So serious is the situation that the United States Public Health Service is giving its assistance and has established three hospitals where trachomatous patients may be treated.

A recently enacted law requires the state board of health, acting with the county boards of health and county medical societies, to conduct schools in each county at which attendance is made compulsory, for the instruction of physicians and midwives in the most approved methods in the prevention of blindness, especial attention being given to ophthalmia neonatorum and trachoma. These diseases are now reportable in Kentucky.

The state board of health is planning to send out in the near future 25,000 copies of an illustrated bulletin, which will go to physicians, state, city, and county officials, women's clubs, etc., explaining in detail the recent legislation in Kentucky dealing with the prevention of blindness in infants, and will also show in text and illustration some of the common causes of blindness and the means and methods of prevention.

In the city of Louisville the twelve nurses of the District Nursing Association recently adopted the admirable custom of inviting the midwives of their city, some thirty-five in number, to meet with them on frequent occasions to discuss their work. This kind of cooperation should prove to be a practical means of education and help materially in raising the standards and efficiency of the midwives.

Due to the efforts of Miss Linda Neville, secretary of the Kentucky Society for the Prevention of Blindness, the following plank will appear in the platform of the Republican party at the coming state election in Kentucky:

"14. For economic, as well as humane reasons, we recommend that and later to continue the work of the United States Public Health Service for the prevention of blindness from trachoma, a communicable and painful disease of the eye, from which the last census report shows that 33,000 persons are suffering in a single section of this state."

Almost identical provisions have also been made in the platforms of the Democratic and Progressive parties of Kentucky, so that the continuity of the campaign now under the direction of the United States Public Health Service is practically assured, even after that body has deemed it necessary to withdraw from the field. It is interesting to note that this plank is the only one having to do with public health which is to be found in each of the three platforms mentioned.

### MARYLAND

The Federation of Women's Clubs gave place on their program and considerable attention at their annual meeting this spring to the subject of prevention of blindness.

### MASSACHUSETTS

The Massachusetts legislature has appropriated $1,500 to enable the State Commission for the Blind to make a special study of persons whose eyesight is seriously defective or who are liable to become visually handicapped or blind; this work to include advice and cooperation as to suitable education for children of school age; vocational guidance and industrial aid in individual cases of adults and minors above school age, and study of similar work done in other states and countries.

Trachoma has been made reportable in Massachusetts.

### MICHIGAN

A report from Michigan shows that 19 persons were saved from blindness during the year 1914 as a result of the activities of the Association for the Blind.

As chairman of the health and hygiene committee of the West Michigan State Fair Association, Dr. Collins H. Johnston, of Grand Rapids, secured from a number of health organizations exhibits for use at the annual State Fair in September. The entire exhibit of the National Committee for Prevention of Blindness was shown, and some seventy lantern slides bearing self-explanatory captions were thrown on the screen continuously day and night. Attendance at these state fairs is very large, hundreds of thousands of persons coming from all parts of the state to see the agricultural exhibits, races, etc. During recent years health authorities have been taking advantage of this opportunity to display effective popular exhibits, and much direct good has undoubtedly been accomplished through this method of reaching the public.

### MISSOURI

The Missouri Association for the Blind has done some effective preventive work, having persuaded the board of health to include ophthalmia neonatorum and trachoma among reportable diseases and also to follow up reported cases. In the past year they have cared for 167 cases of eye trouble. The secretary of the Association gave talks, illustrated by slides, before various clubs, state conferences, etc., and also enlisted the services of physicians in giving the same kind of talks before various organizations.

Kansas City has passed an ordinance making it obligatory upon attendants at birth to apply a solution of nitrate of silver to the eyes of every new-born child. A fine of not less than $25 nor more than $500 is the penalty provided for a violation of the ordinance.

### NEW HAMPSHIRE

A law requiring the reporting of babies' sore eyes and providing for the after care of all reported cases was enacted by the New Hampshire legislature during the last session.

Dartmouth College, Hanover, has a foundation for a lecture each year to entering students, which covers the heredity and principal causes of blindness.

### NEW JERSEY

The State Board of Health of New Jersey will cooperate with the State Commission for the Blind in an effort to prevent blindness by a stricter enforcement of laws; especial attention will be given to midwife registration; to regulating the sale and use of wood alcohol and to following up cases of eye trouble among infants.

### NEW YORK

At the 1915 meeting of the New York State Medical Society held in Buffalo during the last week in April, an interesting innovation was the introduction into the program of five lectures on public health topics given by specialists. Two of the five addresses were on the subject of Prevention of Blindness and Conservation of Vision, and these drew the largest audiences of the session.

During its executive session the State Medical Society adopted resolutions endorsing the efforts being made by the New York State Department of Health and the Committee for the Prevention of Blindness, and urging local societies and academies of medicine to give their assistance in extending educational work concerning the cause and prevention of blindness and promoting the enforcement of laws bearing upon this subject.

At the instigation of the New York Committee for the Prevention of Blindness the Division of Laboratories of the New York City Department of Health is studying 1,000 cases of babies' sore eyes, and also following up 1,000 consecutive births, for the purpose of obtaining information on the following points:

1. The number of cases of babies' sore eyes occurring in 1,000 births.
2. The percentage of cases of sore eyes in which a prophylactic had been used; kind of prophylactic.
3. Percentage of cases of sore eyes in patients delivered by physicians; by midwives; in hospitals.
4. Day of life on which symptoms first appeared.
5. Whether symptoms were due to silver irritation or an infection; kind of organism present.
6. Nature and duration of treatment.
7. Comparative results of home and hospital treatment.
8. Comparative results among breast- and bottle-fed babies.
9. Frequency and seriousness of permanent damage.

From a report of the Division of Laboratories and Research, State Department of Health, July, it is learned that 3,236 of the prophylactic outfits for ophthalmia neonatorum were distributed during the month of May, 1915, as compared with 474 for the same month in 1914. The July, 1915, report shows a distribution of 4,998 outfits during that month.

The New York State Department of Health has recently amended its sanitary code to include provisions for the control of midwives. Upon request, the New York State Committee for the Prevention of Blindness submitted recommendations, which were adopted in substance, and comprise the following:

1. The licensing of all women who call themselves midwives, in order that they may be brought under the supervision of midwife inspectors.
2. After January 1, 1915, the issuing of licenses to those women only who shall have attended fifteen maternity cases and nursed fifteen lying-in patients, under the supervision of a physician—this pending the enactment of laws empowering the Board of Regents to examine and license midwives, and regulate midwife training schools.
3. The adoption of rules and regulations which will limit the work of midwives to attendance upon normal cases only, and nursing of mother and child, these rules and regulations to be enforced by a practical system of supervision which will tend to improve the work of the midwives.

The study of midwifery conditions in Buffalo has been included in a general health survey which is being undertaken in that city under the auspices of the local health department. Upon the recommendation of the New York Committee for the Prevention of Blindness this work is to be of a continuous nature, providing for sustained midwife inspection. Steps have already been taken to adopt a definite system of control, modeled as nearly as local conditions would permit, on the English system of midwife regulation. That is, improvements will be made as the findings of the study show the need, and totally unfit midwives will be eliminated, while those capable of doing acceptable work will be improved through training and instructive supervision. The department of health has delegated a nurse to carry on the work of inspection and to follow up all reported cases of babies' sore eyes.

Attention of druggists in New York City has been called to the provisions of the Sanitary Code prohibiting the use of methyl alcohol (wood alcohol) in any toilet or medicinal preparation for internal or external use, and to the necessity of properly labeling all containers of methyl alcohol. The department of health is strictly enforcing this section of the sanitary code.

At the last annual meeting of the New York State Pharmaceutical Association the question of the wood alcohol label was discussed, and resolutions were adopted requesting the members of the association and druggists in general to make use of the poison label on wood alcohol, which the State Pharmaceutical Association would formulate.

More than one hundred children from the New York public schools were taken during the summer to the Trachoma Summer Camp, located in Orange county, where, with the exception of two or three cases, these children returned almost completely recovered. There is now no danger that these children will lose their sight either wholly or in part from trachoma. The whole experiment, costing about $3,000, was financed by contributions secured by a leading newspaper. Nearly $1,000 worth of property, consisting of tents, cots, blankets, cooking utensils, etc., is now in the hands of the managers of the enterprise, to be used next year as the nucleus for a bigger camp. This work has grown out of a small experiment conducted by the Division of Laboratories of the New York City department of health and the New York Committee for the Prevention of Blindness, when 24 trachomatous school children were sent to the country in the summer of 1911 for the purpose of supplementing local medical treatment by improved hygienic surroundings.

### NORTH CAROLINA

At the annual meeting of the North Carolina State Medical Society in June initial steps were taken for a campaign of education on prevention of blindness and conservation of vision.

At the instigation of Principal Ray, of the School for the Blind of North Carolina, an act was passed by the General Assembly looking toward the prevention of blindness among infants. The act requires that a 1 percent solution of nitrate of silver be administered immediately upon birth.

Dr. McBrayer, in an address, recommended the appointment of a committee on conservation of vision, in order that further constructive work for prevention of blindness in North Carolina might be carried out through educational and legislative action, and it was proposed that the committee attempt to secure the active cooperation of the board of directors of the State School for the Blind.

### OHIO

In this state the Commission for the Blind is strongly supported by an advisory committee of ophthalmologists. Under their direction representative men of the profession have spoken on the subject of prevention of blindness to over 20,000 people throughout Ohio during the past twelve months.

The commission is continuing its newspaper service for the small newspapers outside of the large cities, a kind of work which it has been doing for several years. This service is carried on through the press associations and is eagerly sought by the newspapers of the state.

Toledo has opened a school for myopic children. This makes the third school of that character established in this country, the first being in Boston and the second in Cleveland. Books specially printed in heavy faced large type are used for reading, but most of the instruction is given orally.

In the Cincinnati public schools the following special provisions are to be made for pupils with weak eyes: segregation; half shades for windows; woodwork and desks mat finished; cream colored ceilings and upper parts of walls, buff walls from molding to blackboard, dark brown from chalk trays to floor; scientific artificial lighting; written work on large or desk blackboards; text-books printed in 36-point (one-half inch type) on glazed, buff tinted paper; typewriting by the touch method.

Because of an appropriation of $5,000 for the specific purpose of providing nursing service for the prevention of blindness, under the direction of the board of health, Ohio will have a corps of ten or more public health nurses supported by the state engaged in sight-saving work.

In Cleveland there is noticeable a more general recognition of the real danger of sore eyes. There has been a steady increase in the number of eye cases reported since the work was started in May, 1912, at which time there were six patients, while in May, 1915, there were 1,071.

### OKLAHOMA

"Save the Eyes" was the keynote of a series of addresses delivered from July 6 to 16 at the summer school at Norman for the benefit of teachers assembled there, as well as members of the State Optometry Association, who

were expected to attend. The addresses were under the auspices of the State University.

TENNESSEE

The last session of the Tennessee legislature enacted a law for the prevention of blindness from ophthalmia neonatorum, requiring physician, nurse or midwife to use either a 1 percent solution of silver nitrate or a 15 percent solution of argyrol in the eyes of infants immediately after birth. Failure to comply with the provisions of the law is a misdemeanor punishable by fine and imprisonment.

Seven years ago 33 percent of the annual births in Nashville were attended by midwives. Through the careful weeding out of unfit midwives by prosecution when necessary, Dr. W. H. Hibbett, health officer, has reduced this proportion to 10 percent.

It is expected that the next constructive work for prevention of blindness and care of the blind in Tennessee will be the appointment by the governor of a state commission, the members of which will investigate the needs of the blind, make such provision as may be possible, and suggest action and necessary appropriations to the next legislature.

TEXAS

An educational campaign for the prevention of blindness has been conducted by the Texas Congress of Mothers and parent-teacher associations since the fall of 1914. Many addresses have been given by men prominent in the medical profession on the subject of prevention of blindness as well as the betterment of the condition of the blind.

VERMONT

Fourteen persons recently died in Bristol as the result of drinking whiskey adulterated with wood alcohol, which they had purchased from a druggist. The druggist asserted that he ordered and thought he was using cologne spirits.

IN GENERAL

Widespread and effective educational work is being conducted by women's clubs throughout the country under the direction of the public health department of the General Federation of Women's Clubs. The National Organization for Public Health Nursing has a committee on prevention of blindness and midwives, through which it is endeavoring to create deeper interest among nurses and promote practical sight-saving work by the members of this profession. The Children's Bureau at Washington includes instructions for the care of babies' eyes in one of its bulletins, and through cooperation with the National Committee for the Prevention of Blindness is giving invaluable assistance in educational work.

The most widespread and comprehensive educational campaign in this country concerning the causes of unnecessary blindness is being carried on by Dr. Frank Allport, chairman of the committee of conservation of vision of the American Medical Association. Dr. Allport's admirable plan is to have each county medical society throughout the country include upon its program some time during the year at least one paper on the prevention of blindness, and in addition to this to encourage its members to speak upon this phase of public health work before lay audiences in every community, such as women's clubs, Y. M. C. A.'s, parent-teacher associations and school children.

A continuation of the efforts being made by these various organizations to spread broadcast practical information concerning the care of the eyes should spell success for this important and appealing movement.

# DISPENSARY AND OUT-PATIENT WORK

Conducted by MICHAEL M. DAVIS, Jr.,
*Director of the Boston Dispensary.*

## The First Decade of Dispensary Social Service

It is just ten years ago since medical social service began in an organized way in the United States when the social service department of the Massachusetts General Hospital started at the initiative of Dr. Richard C. Cabot; and the Massachusetts General Hospital's social service department has just celebrated the close of its first ten years by a series of meetings.

Until a few months ago this social service department was confined solely to the out-patient department of the institution. Organized medical social service began in the dispensary; not in the hospital wards, so that an account of its tenth anniversary well deserves place in this department.

HISTORY OF THE FIRST SOCIAL SERVICE DEPARTMENT

At a meeting on December 2, Dr. Richard C. Cabot reviewed the chief steps in the development of the social service department since its beginning in 1905. That year one paid worker, Miss Katharine Pelton, was started informally under Dr. Cabot's personal direction. The next year a step forward was made after the initiative of some of the physicians in the hospital, notably Dr. John B. Hawes, in developing the class method for dealing with tuberculosis. Groups of patients, presenting a common problem, are gathered together for the educational work needed to insure that the treatment is carried out. This class method has since had considerable development in many institutions, not only in tuberculosis, but in other diseases. For example, there have been formed groups or "classes" for educating diabetes patients and keeping diet and hygiene under control. Also "classes" for cardiac cases, and for delicate children, who need to be kept under supervision and whose mothers need to be taught how to feed them properly.

In 1908 the social service department of the hospital received the great accession of Miss Ida M. Cannon, who has been in charge since that year. Meanwhile social service was developing at other institutions, in Boston, and in many other cities, so that at the present time there are some 150 hospitals and dispensaries with organized social service. In New York City alone there are said to be 32 such units, with from one to thirty-one salaried workers.

Further landmarks of the development of this historic social service department, said Dr. Cabot, were the beginning of efficiency tests, in 1911, following the lead of the Boston Dispensary and the establishment of social workers in intimate contact with the out-patient clinics, also initiated at other institutions. The former system had been to keep the social workers in a separate office, taking only such cases as were referred to them by the doctors. The new plan made their services of much wider use to the physician, the clinic administration, and to the patients. About the same date special work for the handi-

capped started, finding places in industry suitable for those crippled in limb or otherwise. This work also has been widely extended.

In 1913 another great field was tapped when, under the leadership of Dr. David L. Edsall, industrial diseases were taken up by a special social worker, in conjunction with the physician. In 1915, the present year, the Massachusetts General Hospital itself has taken a step forward by creating the position of Director of Social Service, and appointing Miss Cannon to the post. Previously only a little social work had been carried on in the hospital wards, and this under separate and independent management. Hereafter all social work in the two great divisions of the hospital will be administratively united.

### "HUMANIZING THE INSTITUTION"

Such was the title chosen by Homer Folks for his address at the anniversary meeting above referred to. Mr. Folks was formerly Commissioner of Charities in New York City, with eleven large hospitals under his direction, and for many years has been secretary of the State Charities Aid Association of New York. The movement for hospital social service, said he, is only one illustration of a general trend towards making institutions more in touch with the community as a whole. When a sick man who enters a hospital goes out again he must take up his life anew. The hospital's responsibility is not only that he should be able to leave its doors, but that he should be connected up with his community again. The hospital's care of a patient is only one stage in the continuous process of the individual's life. Hospital social service and hospital follow-up systems have grown out of a recognition of this truth. In other fields the same principle has had remarkable illustrations in recent years, said Mr. Folks. In reformatories the parole and probation system has connected up the discharged inmates with the rest of the community, started them in families, or secured them jobs, instead of simply turning them loose on discharge from the institution. The probation officers correspond to the hospital social workers. Again, children's aid societies are now placing children out in good family homes, instead of keeping them permanently in institutions away from the community, or turning them adrift after they have passed the institution's age limit. Also very notable has been the progress in penology. Much has been done, especially in the West, to humanize prisons and assist prisoners in finding places again for themselves in the community. The analogy of these illustrations with hospital work will be apparent to every superintendent.

### ORGANIZATION OF DISPENSARY CLINICS

Formerly the out-patient clinic had just a doctor and a prescription pad. Now the organization of a medical clinic, for instance, is incomplete without doctors, laboratory worker, nurse or trained attendant, social worker, and often clerks in addition. One of the recent interesting developments in dispensary work is the utilization of persons who are neither doctors, nurses, social workers, nor clerks. The desire to make clinics more efficient has led to the realization that there is a large amount of detailed executive work necessarily incident to handling many patients. At the Massachusetts General Hospital out-patient department clinic secretaries have been introduced. The duties of these clinic secretaries include the details of getting patients in to the doctor, when the doctor wants them; of seeing if the patients understand what is said to them, and that they are clearly instructed as to what they are supposed to do; to receive answers or prefer inquiries, etc., and countless other details which otherwise take the time of trained technical people. In some other institutions the duties mentioned have been divided among a paid clerk, and either a nurse or social worker, often assisted by one or more volunteers, but volunteers have not been given any primary executive responsibility. Whether or not permanent detailed work can be secured from volunteers is a question which only time can answer. But without doubt there are in any large dispensary clinic a mass of detailed tasks which need doing, and which, if done, increase greatly the medical and social efficiency of a clinic; and it has also been proven that for many of these duties the services of volunteers can be made use of. It is a good thing for the dispensary to have volunteer workers under proper conditions. The exact manner in which they are utilized will of course vary with circumstances in each locality.

Another type of service in certain clinics is now rendered by persons who may be called therapeutic assistants. In the classwork with the tuberculosis or diabetes patients previously referred to, the doctor soon finds that many specific explanations as to diet, hygiene, occupation, etc., must be given to each patient; that each must be treated as an individual, and that it is quite impossible for the doctor himself to perform all these details. In some classes, volunteers, and in others, professionally trained assistants are employed. Where the task is chiefly to see that the doctor's instructions are understood, and to assist and report as to their execution, volunteers can well be employed. In proportion as much social work, or technical instruction, is necessary, trained nurses or social workers must be the doctor's primary dependence, and the place of the volunteer, while by no means abolished, becomes secondary.

The utilization of such functionaries as clinic executives, secretaries, clerks, therapeutic assistants, etc., is of especial interest, as an illustration of the rapid development of technic in out-patient organization. The effort to make dispensaries efficient in treating patients as well as in diagnosing disease will doubtless lead to many further specializations of functions.

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A new home for the Aurora Hospital, Aurora, Ill., which has been in course of construction for the last year, has been completed and is being equipped. It is a four-story and basement fireproof structure, 125 by 42 feet. The new hospital will be opened about January 1.

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In mentioning the opening of the hospital at Fort Sill, Okla., erected by the government for the benefit of the members of various tribes of Indians on reservations in southwestern Oklahoma, the *Tulsa World* remarks that the older Indians, who still cling to their superstitious fears of the white "Medicine Man," stand at a distance and gaze in awe at the new structure. Some of the old tribesmen, according to the *World*, refuse to go near the hospital. The younger Indians, however, understanding what it means, are pleased with the building and take great interest in it.

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Assisted by members of the Society for the Prevention of Tuberculosis, the California State Board of Health has completed the draft of a bill, that will be introduced before Congress by a California solon, which asks for the Federal subsidization of all hospitals in the various states that care for non-resident, indigent tubercular patients. To receive this subsidization a hospital will be required to meet certain specifications set by the Federal health officers. According to a law enacted by the last California legislature all county hospitals within that State are subsidized $3.00 per week for the care of resident indigent patients.

# QUERIES AND ANSWERS

### Care of Battleship Linoleum

To the Editor of THE MODERN HOSPITAL:

Do you know of any preparation that is being used by the hospitals to preserve battleship linoleum? If so, will you please send the formula or answer through the Query and Answer Department of THE MODERN HOSPITAL?

PIEDMONT SANATORIUM,
Atlanta, Ga.

Dr. Joseph B. Howland, assistant administrator of the Massachusetts General Hospital, replies to this inquiry as follows:

We use the formula given below, and we treat battleship linoleum in the same manner as we do a polished wood floor. A short string mop, an old one cut down to about three inches in length, is used to apply the polish; then it is heavyweighted. The first part of the heavyweight work is done with just the heavyweight and finished with a flannel cloth under the weight.

On a new floor the polish is applied every day for a week before occupying, if possible, and then followed up once a week. We wash the floors only when the wards are being house-cleaned. Soap and water remove the polish and the same process has to be followed as stated above. Soiled spots, not removed by the polish, are taken off by application of turpentine on a small vegetable brush.

As turpentine is a cleansing medium, we do not think it necessary to use soap and water, except as above stated. We would suggest that only a thin film of the polish be used on floors.

FLOOR POLISH

5 gallons turpentine
30 ounces paraffin
20 ounces yellow wax
} blend in a steam jacketed kettle.

Add one ounce of ammonia water to each pint after the mixture has cooled. Without ammonia water the floor polish is rather gummy.

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### Relations of Interns and Nurses

To the Editor of THE MODERN HOSPITAL:

What is the most satisfactory management of the social relation between interns and pupil nurses? Is absolute forbiddance of any social relations preferable to having them meet socially in the nurses' home or permitting them to go together to theaters, dances, etc., under the same conditions as are permitted to young men not connected with the hospital? MATRON.

There is a great difference between hospitals in the handling of the relations between interns and pupil nurses. It is the experience of veteran hospital administrators and a good many heads of training schools that it is utterly impossible to keep these young people apart, and that it is far easier to control their relations than it is to forbid any relations between them.

It seems almost conceded that the best way to do is to put these young people on their honor, to demand their obedience to the rules of discipline in the hospital, which should provide that their relations while on duty should be restricted to business and then outside of the duty hours to permit them certain social relations, which must be controlled and guided by the matron of the nurses' home in conjunction with the administrator of the hospital, who is supposed to have control of the interns. The writer of this reply has always been accustomed to state specifically to new interns upon their entrance to the hospital what he expected in regard to their relations to the pupil nurses, and the statement usually took this form: "You young gentlemen are going to meet constantly, and in an intimate way, a number of young ladies who happen to be pupils in the training school; there is no disposition on the part of the hospital to interdict social relations between you, but every young man coming into this hospital as a medical officer will be placed on his honor in this regard; if you desire to call upon one or more young women in the training school you have the privilege to do so in their home and amid their social surroundings, and in accordance with the rules laid down for their conduct by the matron of the home and the superintendent of the school. If you wish to invite these young ladies to go with you to a place of entertainment or recreation at any time, when the rules of the institution will permit their going, you have permission to do so, and it is only expected that you will invite them to no place of entertainment where you would not be willing for your own sister to go with another young man; it is expected that as young professional men, who have seen more of the world than these young ladies have, and who must know the rules of society in regard to the conduct of young ladies, you will protect them in every way just as you would expect your own sister to be protected if she were situated as they are."

In the experience of this particular administrator, this rule of honor was never violated but once, and the intern in the case was dismissed from the institution summarily.

Where interns and pupil nurses are absolutely forbidden to hold social relations with each other, and where they are kept constantly under surveillance to see that this rule is obeyed, the young people are very likely to challenge the rule and to match their wits and skill against the authorities and get together under far less propitious conditions than if unrestricted relationship, on honor, were permitted.

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### The Colquitt Hospital Law of Texas

To the Editor of THE MODERN HOSPITAL:

Can you tell me just what the Colquitt law is? We have a small new hospital, and at the end of the first year find ourselves $2,300 in arrears, and I am wondering if there is anything in that law that can be used to help us out of our dilemma. DECORAH HOSPITAL,
Decorah, Iowa.

The Colquitt law of Texas is fashioned after the Iowa law introduced in the legislature by Dr. E. E. Munger, of Spencer, Iowa, five years ago and passed at the same session. The Iowa law provides that counties *may* construct and operate general hospitals, and permits county authorities to levy a tax up to a certain amount for the purpose. At the first election after the Iowa law was passed, Washington and Jefferson counties voted to tax themselves for county hospitals, and the Washington County Hospital was built at Washington and the Jefferson County Hospital was built at Fairfield. No other counties voted in favor of the law at that time; but a number have since come in under the law and have either built or are building county hospitals under its provisions.

A number of the states, ten in all, followed Iowa and passed similar laws, each one of them making it optional with the county to create such hospitals. The Texas legis- then governor, making it mandatory on counties of over

20,000 to build and operate general hospitals and *compelling* them to tax themselves for the purpose. Those hospitals are now being built all over Texas. The difference between the Texas law and the others is that the Texas law compels the counties to build and conduct these lature passed a bill presented by Mrs. Colquitt, wife of the hospitals, whereas the other states permit the counties to do so on a vote of the people.

The Colquitt law specifies what classes of cases shall be cared for in these hospitals, viz., medical, surgical, gynecological, obstetrical, children, tuberculosis, and the communicable diseases.

The Colquitt law provides that counties of less than 20,000 population may join with other counties, taxing themselves pro rata to help pay for the hospital's construction and operations.

It doesn't seem possible that a privately owned and conducted hospital could have any benefits from either the Colquitt law or the Iowa form of law; but it would seem possible that if the people of your county chose to do so the county authorities might take over your hospital on some agreed arrangement and operate it as a county hospital under the Munger law. Undoubtedly the attorney-general of your state could tell you whether this would be possible, and if so you could then approach the proper authorities in the county to handle the matter. It might be said that the two hospitals in Iowa operating under this law have demonstrated the success of the principle and are doing a wonderful amount of good for the people intended to be served.

## LETTERS TO THE EDITOR

### Corrections About "Bedlam" Hospital

To the Editor of THE MODERN HOSPITAL:

I have read with much interest the article in your October issue entitled "The Most Famous Hospital in the World—Old Bedlam."

You pay very just tribute to a most excellent and interesting story told by the hospital chaplain, Rev. Edward Geoffrey O'Donoghue, in his book, "The Story of Bethlehem Hospital from Its Foundation in 1247." The story of Bethlehem Hospital, its name shortened in modern times to Bethlem, and from remote times corrupted to Bedlam, reads in many places like a romance, in others like a sad tale of suffering, ignorance, superstition, and often brutality and corruption, which, continuing for page after page, is depressing to a degree.

Sufficient is known, however, of the historical facts connected with the hospital, and the story is plainly enough told to permit a correction of the mistakes which have crept into the pages of THE MODERN HOSPITAL—mistakes which are quite clearly due to hasty reading of Rev. O'Donoghue's story.

There is no evidence in the reference to the procession of Henry III from St. Paul to Westminster Abbey, on page 16, that the procession passed near St. Botolph's Bishopgate. It would have been a very roundabout way for the procession, and the sentence in the second paragraph clearly shows that "the incense arose about and the holy water fell upon the land given by Simon Fitz Mary the sheriff" during a procession of ecclesiastics ten days after the progress of the King from St. Paul's to Westminster. This, however, is a small detail, as is the statement that "Dickens' conception of Sairey Gamp and Betsy Prig was formed from what he learned of the attendants at Bedlam," for which "The Story of Bethlehem Hospital" gives no authority.

Henry VIII followed the example of his predecessors in farming out the patronage of Bethlem to favorites, but did he do much worse, in view of the practices and intelligence of his times, than the governors of some of our own states who appoint political favorites to the medical superintendencies of state hospitals and expect them to distribute the minor appointments as local politicians shall dictate? In the end he gave the hospital the royal charter under which it is governed today, and his act was the beginning of better things for the hospital—better things, to be sure, only attained after long years of much that was deplorable in the management of the institution.

I wonder where your reviewer got the impression that George III was ever a patient at Bethlem. He says: "Perhaps the most eminent patient that Bedlam ever had was George III, who groped his way in blindness about its halls for years after having lost the American Colonies, and who was removed from the famous hospital only to be allowed to die in Windsor Castle."

The author of "The Story" says specifically, "For the last ten years of his life George III was confined in Windsor Castle, and there he died January 29, 1820."

George III had his first attack in 1762; a second in 1765 and a third and more prolonged attack in 1788. At this time so loth was the court to associate the King's malady with anyone even connected with Bethlem that Dr. Thomas Monro, then associated with his father at Bethlem, who was called in consultation, retired because of this prejudice. Other attacks followed, and, as has been seen, the King died insane.

The King was never at Bethlem. Those who are interested in the story of the King's attacks will find in Dr. Isaac Ray's contributions to mental pathology a very readable account. He omits, however, any mention of the attack in 1762, placing the first attack in 1765.

Dr. Ray's account first appeared in the *American Journal of Insanity* for July, 1855.

I trust that these corrections, which are not made in any spirit of captious criticism, will be received in the spirit in which they are sent, and that they may serve to call attention again to a most interesting and valuable work, "The Story of Bethlehem Hospital."

EDWARD N. BRUSH.

### The "Twig" Movement in Hospital Support

To the Editor of THE MODERN HOSPITAL:

Early this fall, it seemed to the executive committee of the lady board of directors of the Ohio Valley General Hospital at Wheeling, that while the Woman's Hospital Association, of which they were the executive heads, reached a large number of influential women of the city, the organization was not growing—had stood at about two hundred and fifty members, paying their annual fee of $1.00, for several years—and that while each one of these members was interested more or less, had assisted in the card parties, plays, donation days, tag days, etc., and had raised in support of the hospital some $11,000 within the past three and one-half years, yet the younger women of the city were not interested, were not using their talents in support of the hospital, which is the largest and most popular charitable institution of the city.

So, having in mind the very successful operation of the auxiliary organization of the Rochester General Hospital at Rochester, N. Y., known as the "Twigs," their plan of operation was obtained and with some adaptations used in the organization of the General Hospital "Twigs" here.

The plan in short is this: An auxiliary is formed, composed of as many "Twigs" or branch circles as may be useful to the hospital. Each "Twig" (a "Twig," because too

small to be a "branch") is composed of from ten to twenty young women, neighbors, of similar tastes and acquaintanceship. Meetings are at the homes of the members. Each "Twig" is given a specialty; to manufacture an article or provide entertainment, or in some other way assist the hospital.

At the beginning, the hospital provides those "Twigs" which agree to sew with the necessary material for the manufacture of such things as tea towels, bath towels, dressing towels, table linen, tray cloths, curtains, dresser covers, baby slips, diapers, binders of various sorts, ward night shirts, pneumonia jackets, etc. Each "Twig" is furnished with a pattern, specifications, and a sample article already made up. These articles are given out through a central committee (under the direction of the hospital housekeeper), which is responsible for the manner of their making. If the work is not up to standard, it is returned to that "Twig," with the request that it be done exactly according to specifications. This prevents any odd sizes, or the articles being made according to the taste of the individual. They must be made according to the hospital standard. Next year it is expected that each "Twig" will purchase its own material, of course through the hospital stores department.

Not all the "Twigs" are manufacturers; some are entertainers and send their members to the hospitals to entertain the children in the wards, or read to old patients, or to provide some entertainment in the way of basket-weaving, modeling, crocheting, etc.

Every second Wednesday is set aside as "Twig" day, and every other afternoon social function must make way for or be absorbed by the "Twig" meeting. At these meetings a letter is read from the superintendent of the hospital giving some interesting incidents, and telling of the usefulness of their work.

This movement has, first, meant a backing for the hospital morally, and second, a support financially. Where before there may have been criticism because of lack of knowledge, now, because it is the popular thing, everyone is boosting for the hospital.

We believe in publicity. We believe that the more the public comes to know about the hospital and its work, the more they will be in sympathy with it, and the better supporters they will make. This is especially necessary in a small hospital, where the endowment fund amounts to little or nothing, and it will not hurt an old-established and well-endowed hospital, because it broadens the line of effort and gives the institution a greater opportunity.

PLINY O. CLARK.

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Dr. S. Lewis Ziegler, director of Philadelphia's department of public health and charities, recently appointed twenty-five prominent women to constitute a woman's advisory council in connection with the city's municipal hospitals. The women will have general charge of the charitable phase of the work at the Philadelphia General Hospital and the Hospital for Contagious Diseases, and will look after the comfort of the inmates of the homes at Byberry and Holmesburg.

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The excavation for a $100,000 orthopedic hospital to be erected by the House of St. Giles the Cripple, Brooklyn, N. Y., has been completed. The building will be a modern fireproof structure 92 by 46 feet and four stories high, with accommodations for forty-six patients. Ludlow & Peabody, New York City, are the architects.

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Miss Adeline Henderson, for the last eight years superintendent of the training school of the New York Hospital, New York City, died at the hospital, November 24, of anemia.

## THE USE OF WASHED GAUZE

### Massachusetts General Hospital Finds Great Saving in Cleaning Used Material—Method Must Be Thorough

Up to 1904, at the Massachusetts General Hospital, it had been customary to destroy all gauze which had been soiled by blood or pus, and we believe that this was the rule at all hospitals, although some had made an attempt to recover the gauze from their clean cases. In October, 1904, with the consent of the visiting staff, a process of washing and sterilizing all gauze was adopted, and its success has exceeded our expectations.

In the first eight months of 1904 we used over one hundred and forty miles of gauze three feet wide. During a like period of 1914, ten years later, a hundred and eighteen miles were used. An idea of what our "new gauze" purchase would have been had we not reclaimed "used gauze," we would state that one hundred and eighty-four miles of "washed gauze" has been put to use in the first eight months of 1914. The money expended for gauze during the first eight months of 1904 was $4,366.52, while in 1914 during the same period the expenditure was $3,610.54, a saving of $755.98, though one hundred and sixty-two miles more were actually used.

The method is as follows:

All gauze and bandages from ward dressings, amphitheater, out-patient department and operating rooms (except the dressings used on precaution cases, as anthrax, tetanus, gas bacillus; or "Scharlach R" stained gauze), are placed in covered galvanized iron pails, and a collector from the laundry force gathers them twice a day, leaving a clean pail in the place of the one removed. The same man sorts the gauze, transferring it from the pails to mesh bags made of cord, being careful that the bags are only half filled. The gauze is kept in these bags throughout the rest of the process of washing and laundry sterilization.

It is allowed to soak over night in *cold water*; the water should be changed several times. The following morning the bags are put in an iron washer, capable of resisting steam pressure up to ten pounds. They are then rinsed in *cold water* until the water returns perfectly clear. The gauze is then washed with *warm water*, soap and sal soda, using enough soap to make heavy suds. After this washing, it is rinsed in *hot water*. After the rinsing, enough hot water is turned into the washer to cover the bags as they lie on the bottom of the washer. Steam is then turned on to a pressure of ten pounds, which is maintained for a period of one-half hour. Following this laundry sterilization, the gauze is washed again with the addition of one pail (twelve quarts) of soft soap, followed by three rinsings, two hot and one cold. During all these washings the washing machine is moving with its to-and-fro motion, which continually agitates the gauze and subjects every portion of it to the action of the steam and water. A self-registering thermometer placed in the gauze twice showed a temperature of 239° and 240°. The thermometer which registered on the outside of the washer showed a temperature of 236° at pressure of ten pounds.

After washing the gauze is put in an extractor, and after extraction, *while damp*, it is sent to the out-patient department, where it is inspected under the direction of an intelligent maid. It is untangled and straightened, and the maid is instructed to throw out any piece of gauze which is stained or has anything adherent to it. The gauze is again handled by nurses, or supply room maids, and is cut to suitable sizes and placed in packages for the last sterilization. These women also have instruction to look the gauze over carefully for any stained pieces or

any with foreign matter adherent. The final sterilization is then done at a temperature of 250° F., with a pressure of fifteen pounds.

Bandages are stretched and rerolled by the supply room maids. It is interesting to note that almost all the bandages used in the out-patient department are of "used" gauze excepting about ten pounds a year.

It has been found that washed gauze is softer and more absorbent than the new gauze. Repeated tests, conducted in the pathological laboratory, have shown the safety of the process. The overhauling and the straightening of the washed gauze involves a considerable amount of labor, and were it necessary to hire additional people to do the work the saving would be much less. In our large out-patient department we must of necessity have a certain force of messenger boys and maids when the clinic is running to full capacity. Much of the time all this force is not required, and when not busy in the clinics or occupied cleaning the buildings their time is utilized on the gauze work.

So much for the gauze, which is recovered and utilized again as gauze. There is a part which is in too small pieces or is too badly tangled to be worth straightening. This material is run through a rag picker and becomes a very light and absorbent lint, which is sterilized and supplied for dressings where absorbent material is ordinarily utilized. It is used also in the boiler house in the place of waste for wiping around the engines. Another part of the gauze is discarded because it is stained with chemicals. These pieces are utilized by the house cleaning force.

This process of gauze reclamation means not only less gauze bought, but less absorbent cotton, as well as less waste for the engine room. All pieces of compress cloth, many of which have been thrown away in the past, are now washed and sterilized by the same method, used over again if large enough or run through the picker if small.

FREDERIC A. WASHBURN, M. D., Supt.
Brought Down to Date by Eugene Walker, M. D.

### New York's Care of the Aged

The Department of Health, through its Division of Institution Inspection, has completed a survey of the various Homes for the Aged in Greater New York. The following speaks well for provision afforded the old people of the city:

"We are glad to report that out of the forty-six institutions devoted exclusively to the care of the aged, not a single one was found concerning which serious complaint could justifiably be made.

"The buildings of brick or stone were in every instance of adequate size, and with the exception of four, surrounded by ample grounds. The ventilation, plumbing, lighting, heating and sewage were satisfactory.

"The furnishings in all the homes were found to be adapted to the needs of the inmates. The kitchens were well equipped, the sleeping and dining rooms comfortable and commodious. There were iron bedsteads with hair and cotton mattresses. The supply of bed and table linen, towels and soap was sufficient for the demands of hygiene and sanitation.

"The food was found to be well cooked and well served. The supply of help throughout was adequate, and the housekeeping was invariably well done—in many instances exceptionally well done.

"It was pleasant to observe the excellent accommodations for the sick. These included treatment rooms, large or small, as required, always pleasant and well ventilated and provided with all necessary sick room supplies. Competent nurses were in attendance and skilled medical services were provided.

"The bathing and toilet facilities of the institutions were found to be as follows:

1 bathtub for 1 to 5 inmates— 6 institutions.
1 bathtub for 5 to 10 inmates— 9 institutions.
1 bathtub for 10 to 15 inmates—11 institutions.
1 bathtub for 15 to 20 inmates—10 institutions.
1 bathtub for above 20 inmates—10 institutions.
1 toilet for 1 to 5 inmates—12 institutions.
1 toilet for 5 to 10 inmates—21 institutions.
1 toilet for 10 to 15 inmates—10 institutions.
1 toilet for over 15 inmates— 3 institutions.

"There is, of course, always room for improvement. Suggestions have been and will still be made. In some instances isolation facilities might well be increased, and in others more toilets and bathrooms are needed; again, more thorough screening against flies would often increase the comfort of the inmates. Altogether, however, the institutions visited provide excellent care for the aged of this city."

# NEW INSTRUMENTS AND APPLIANCES

VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.

### Device for Treatment of Fractures

BY DRS. F. W. PARHAM AND E. D. MARTIN

The instrument illustrated here has been in the market for some time, but it seems that until lately it has not received the attention it really deserves.

During the meeting of the Clinical Congress of Surgeons in Boston recently, these instruments were used with great success at the clinics that were given in several of the large hospitals during the week. The method was highly recommended by the surgeons in Boston, who have used it for some time.

The construction of the instrument is very simple, and the same is true of the technic. While the method is

Parham-Martin's bone banding instrument.

applicable in most types of fractures, it is especially valuable in cases of oblique fracture.

The outfit consists of four parts only—a slotted bar of steel eight inches long and one inch wide, a threaded steel rod, with large knurled screw, and a band of soft steel about six inches long and from one-eighth to three-sixteenths inches wide.

After the fragments of the bones have been brought into apposition, the band is bent at a suitable angle and passed around the bone with its narrow end; then is slipped through the slit in the widened part at the other end, and attached to a pin at the bottom of the threaded rod. By turning the knurled screw at the top, the band is slowly but surely tightened, and sufficient force can be

exerted to make it fit snugly around the uneven bone. In order to fix it in position the instrument is turned over and the band is bent back over the slit, then cut with a strong pair of scissors or with the bone forceps.

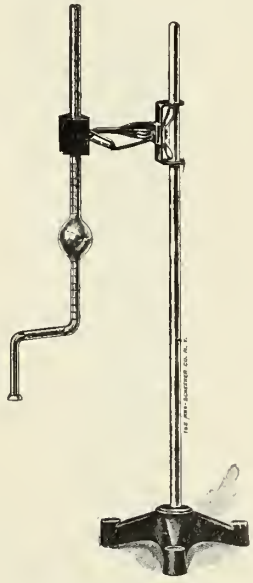
An ordinary small pair of tinners' shears would, however, be more suitable for the cutting of the band, as it will prevent the spoiling of the surgical scissors or the bone forceps and consequently will be less expensive in the long run.

### The Stalagmometer

Traube has devised an instrument called the stalagmometer whereby the concentration or density of liquids can be determined with accuracy by means of capillary analysis or surface tension.

This instrument, it would seem, should find practical and efficient application in the pathological laboratory as an aid in the diagnosis of certain diseases, such as cancer of the stomach, the ovaries, pyloric stenosis, cirrhosis of the liver, tuberculosis, typhoid, etc., by this means following their progress from day to day.

Traube and Blumenthal have shown that normal stomach contents and that of slight digestive disturbances averages between 118-126 normal drops. On the other hand, in the presence of more serious affections, for instance, carcinoma, pyloric stenosis, etc., the number of drops of the freshly examined stomach contents have almost invariably been considerably increased, that is, from 126 to 150. In the absence of bile such a high count, therefore, suggests some serious disease.



Traube's stalagmometer.

Numerous urine examinations have shown that normal urine and pathological urine secreted by actively functionating kidneys, averages from 102 to 115 drops. But as soon as the kidneys cease to functionate well—nephritis showing peptone, cirrhosis of the liver, cancer of the ovaries, severe pneumonia, cancer of the gallbladder, etc.—it has been observed that the drop number is increased from 115 to 140. Daily examinations often give valuable information as to the progress of the disease.

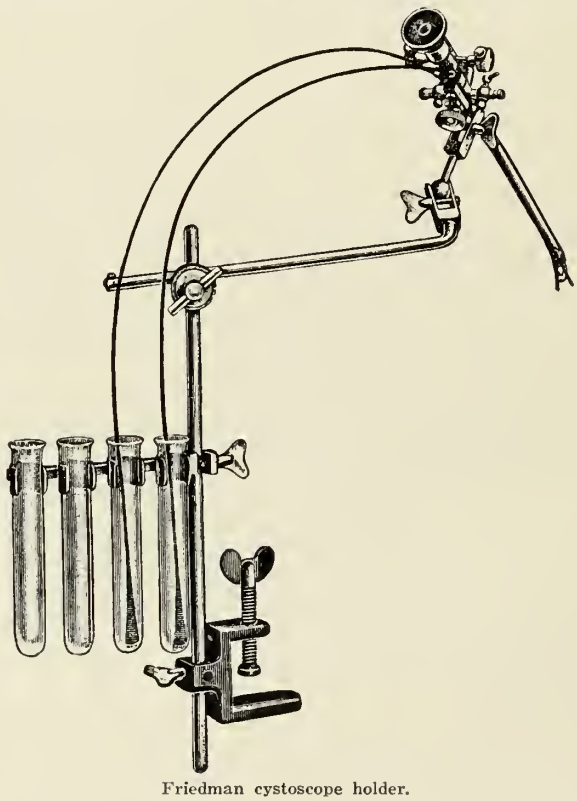
Capillary analysis may also be profitably employed in the examination of fresh blood, for while normal human serum averages from 109 to 112 drops, in the presence of uremia, these numbers were found increased to 116 or 118.

The invention of the stalagmometer has made it possible to determine exactly the degree of concentration even when only very minute quantities of capillary-active substances are present, not only in watery solutions, but in solutions containing considerable admixtures of capillary-inactive substances as well.

### Dr. Louis Friedman's Cystoscope Holder

Cystoscope holders are made either in the form of a floor stand or to be attached to the examining table. They are usually either too heavy or too bulky for supporting a light instrument like a cystoscope, while some are complicated and clumsy.

Dr. Louis Friedman, of New York, has had made by the Wappler Electric Co. a cystoscope holder which is extremely easy to manage, simple in construction, light and



Friedman cystoscope holder.

strong, and will hold any kind and size of cystoscope in any position desired. It is attached to the table or to the leg-holder rod. During cystoscopy it can be swung out of the way when not wanted and is not in the way when in use because of its small size and compactness. It holds the cystoscope in a steady position while urine is being collected from either kidney; it is very useful when one has to work without assistance and particularly convenient and practical for demonstration purposes, as the cystoscope stays exactly where placed, so that the field in the bladder under observation can be studied at leisure.

There are other practical uses for the cystoscope holder which will suggest themselves to the urologist. For instance, cystoscopic photography is being more frequently done. In this work it is of course essential that the cystoscope be held without the least movement. For such work the holder should prove invaluable.

The Physicians' and Surgeons' Hospital Association, Denison, Tex., has recently been incorporated, with Drs. E. L. Seay and T. J. Long, among others, as directors.

# THE MODERN HOSPITAL

*A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services*

Vol. VI *February, 1916* No. 2


## THE NEW MOUNT SINAI HOSPITAL OF CLEVELAND

### A Group of Buildings of Great Elasticity, to Which Indefinite Additions May Be Made Without Disturbing the Harmony of the Parts—Location of the Various Service Units Permits Great Economy in Administration


By (I) WILLIAM S. POST, of George B. Post & Sons, Architects, New York; (II) S. S. GOLDWATER, M. D., Hospital Consultant


I.

THE problem of the architect in planning a hospital group of buildings is dependent, first, on the opportunity which the site presents. The plot in this case is bounded on the east by One Hundred and Fifth street, beyond which is an extended park system, and to the west by Ansel Road, which is relatively unimportant; to the north and south it is bounded by private property. The main building, therefore, was faced east, toward the park and a transverse corridor run from east to west to form the main artery of circulation between the buildings, which themselves were placed north and south, thus giving proper exposure to sunlight. Thus the general disposition of the buildings was easily determined.

The site, however, presented unusual features. There were two plateaus having a difference of elevation of about 8 feet and divided by a steep terrace. The upper level was approximately on grade with Ansel Road and about 20 feet above One Hundred and Fifth street; thus the lower level of the site was about 12 feet above that street. This circumstance was taken advantage of, as an examination of the block plan will show —the service buildings and service driveway being on the lower level, and the male public ward and the children's and maternity wards being on the higher level. The ground in front of the south half of the main building was cut away, bringing this down to the lower level, or approximately 12 feet above One Hundred and Fifth street. The approach to the front porte-cochere is by sufficiently easy curved gradients from One Hundred and Fifth street. To further avoid unnecessary work, cellars were provided only where storage was necessary, and piping connections are made by means of the main transverse tunnel and branches.

The general plan is arranged for future extensions by means of added buildings, and care has been exercised in the construction and arrangement of those parts which are used temporarily for purposes that will not be their final use, so that they are convertible with the minimum of change. The problem of the exterior architecture was much simplified by the fact that the main building was made longer than the wards, and that the site is higher than the park, from which the building will be chiefly seen; thus it has been possible to finish all the buildings in the simplest way, except the main building, which has been carefully studied with a view to the purest and most restrained architectural expression. The style adopted is that of the English renaissance of the Georgian period, which seems particularly adapted to hospital buildings on account of its domestic character, and because it lends itself so well to a material of warm and cheerful tone. A wire-cut brick of general grayish pink, with unusually great variations of color, was selected, and was laid with a wide joint in old English bond, with black headers.

A base of granite is surmounted by a ground floor treatment in Indiana limestone, above which are walls of brick trimmed with limestone on the

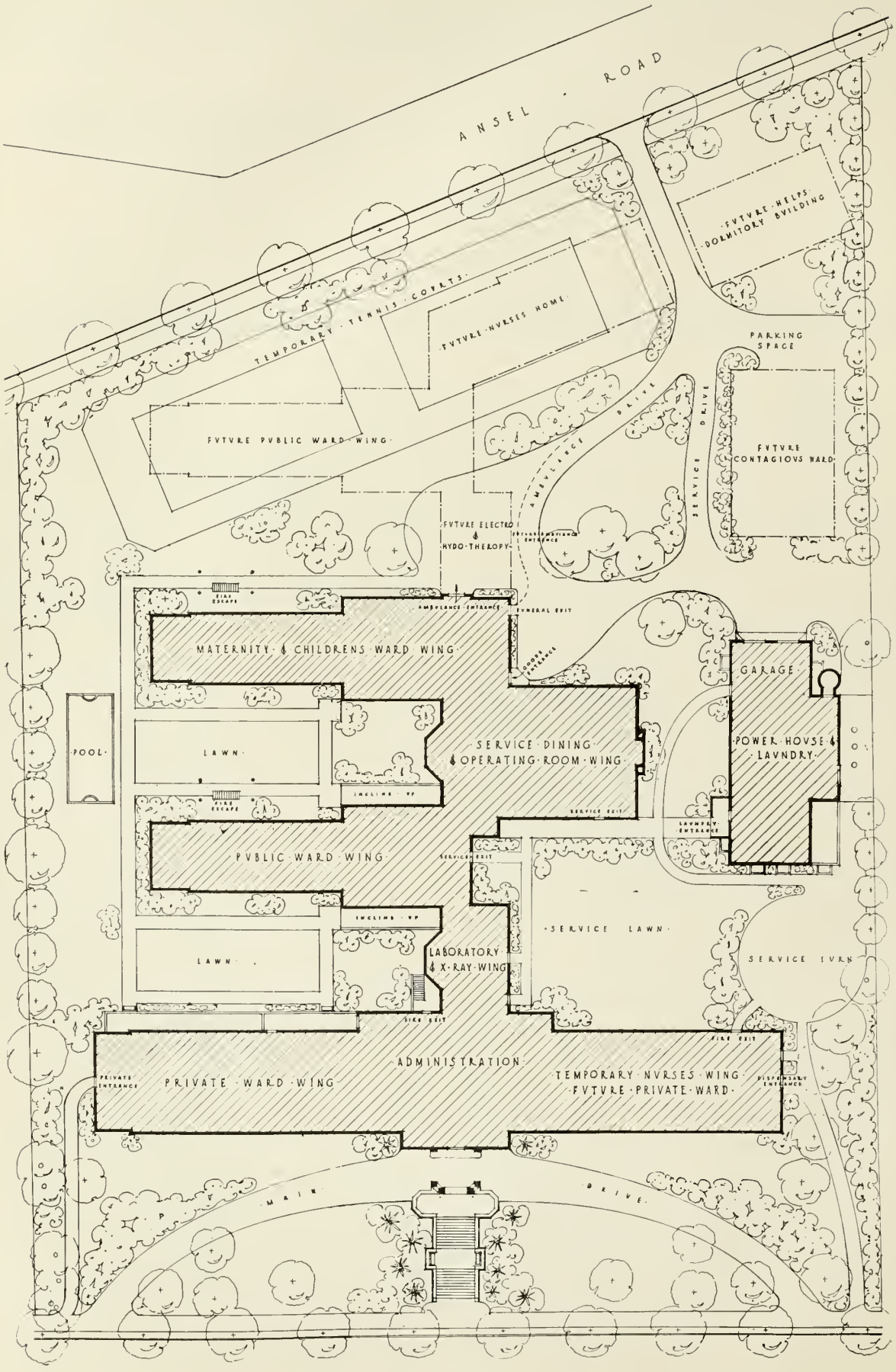



Fig. 1. Mount Sinai Hospital. Plot plan.

first story of the main building, and terra cotta matching the limestone above this, and including the cornice and the trims of the other buildings.

The interior finish is, with the exception of the entrance foyer, absolutely simple, the objects sought being permanence, sanitation, and economy of construction.

The interior arrangements will be described by Dr. Goldwater, who, as the professional expert of the hospital, collaborated with us in the preparation of the plans.

II.

The accompanying plot plan of the new Mount Sinai Hospital of Cleveland shows a site almost square, extending 328 feet from north to south, and having a length on the middle line of 412 feet from east to west. The plot has street frontage on the east and west; its southern line is contiguous to a residential block, which is partly covered by low, scattered dwellings, thus favoring the sun exposure of the hospital wards. To the north lies a one-story brick street car barn, which will probably be removed in the near future. The architectural front of the hospital is on the east, overlooking a public park.

The administration building, occupied in part by private patients, the two ward buildings already completed, and the third ward building, which is to be added in the future, extend in a north and south line from the main hospital corridor, which runs from the principal entrance in the east center of the administration building to the ambulance entrance at the west. To the north of this corridor are the kitchen and its accessories, the dining rooms (directly above the kitchen), operating rooms (above the dining rooms), laboratories, and various treatment rooms. The steam plant, laundry, and garage occupy a separate building, directly north of the kitchen; and nearby space has been reserved for an isolated building in which patients suffering from contagious diseases will ultimately be housed.

Nurses and resident employees will be accommodated, for the present, in certain sections of the administration building, described below. Later, when money becomes available, a nurses' home will be erected on a plot extending to the northeast from the western extremity of the main corridor; beyond the future nurses' home, space has been reserved for a dormitory building for servants.

At the outset the hospital will offer accommodations to 32 private patients, occupying single rooms; to 26 semiprivate patients, occupying small wards; to 23 male ward patients; to 25 female ward patients; to 25 maternity cases; and to 23 children; making a total of 154 beds. The future capacity of the hospital will depend on the height of the ward building yet to be erected; it is expected that this will be either a three- or a four-story building, housing from 75 to 100 patients.

The relations of the various parts of the hospital are so intimate that the plan can best be described by treating the entire structure as a unit. Technically, while the hospital possesses much of the appearance and all of the advantages of the pavilion type, it may be more accurately described as a corridor hospital. There is a service tunnel beneath the ground floor.

The absence of a cellar made the planning more difficult than it would otherwise have been; but it is believed that the difficulties have been overcome, and that the location of the general entrance and the dispensary, ambulance, morgue, and goods entrances on the same level has been accomplished in a manner which will avoid all difficulty and inconvenience in the actual administration of the hospital.

The administration building, fronting on Wade Park, is built on a natural bluff, having an average height of 12 feet above the curb level of the street, on which a car line runs. The main entrance is reached by steps from the street, as well as by a driveway which inclines gradually from the street level to the porte-cochere.

On entering the building, the visitor finds himself in a square hall, with general office and application counter to the right, a reception room to the left, visitors' alcoves on either side of the main vestibule, and, directly facing the entrance, a square hall opening on one side into a fireproofed stair well and on the other into the passenger elevator. Communicating with the general office is the private office of the superintendent, which is large enough to serve also for a meeting room of the board. Adjoining this office is the office of the social welfare department, and beyond is the out-patient department, which has a separate street entrance.

It is expected that the out-patient service will be comparatively small for a time at least, owing to the residential character of the neighborhood; but it has been the experience of other high-class general hospitals that, irrespective of the location, out-patients are sooner or later attracted in large numbers, and therefore the plan provides for the extension of the out-patient department without material alteration to the present building.

Adjoining the out-patient entrance is an isolation room for contagious suspects, and three large examining rooms designated respectively for the various medical services, for eye, ear, nose, and

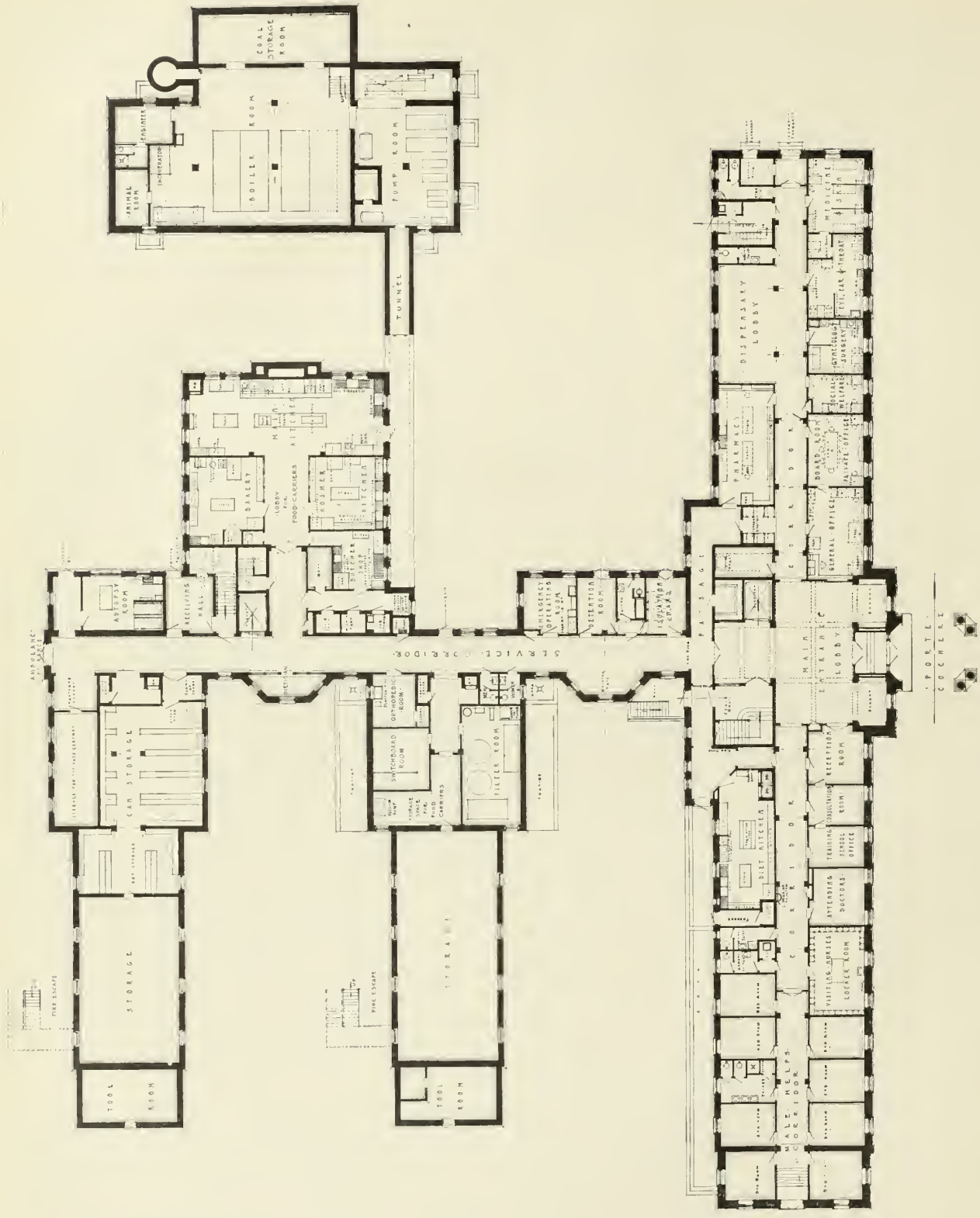



Fig. 2. Mount Sinai Hospital. Ground floor plan.

throat work, and for gynecology and surgery. The large dispensary lobby or waiting hall is the key to the future enlargement of the dispensary. This hall can be extended to the north into the hospital yard, and additional rooms for examination and treatment can be built on either side of the proposed extension.

The pharmacy is happily located between the dispensary and the main hospital; a dispensing window opens directly into the dispensary lobby, while at the other end of the pharmacy is a door leading to a rear passage, which communicates with the main service corridor of the hospital.

Opposite the general office are a large vault for records and valuables, and a double row of telephone booths for the two Cleveland telephone services.

To the left of the main entrance, one finds, in the

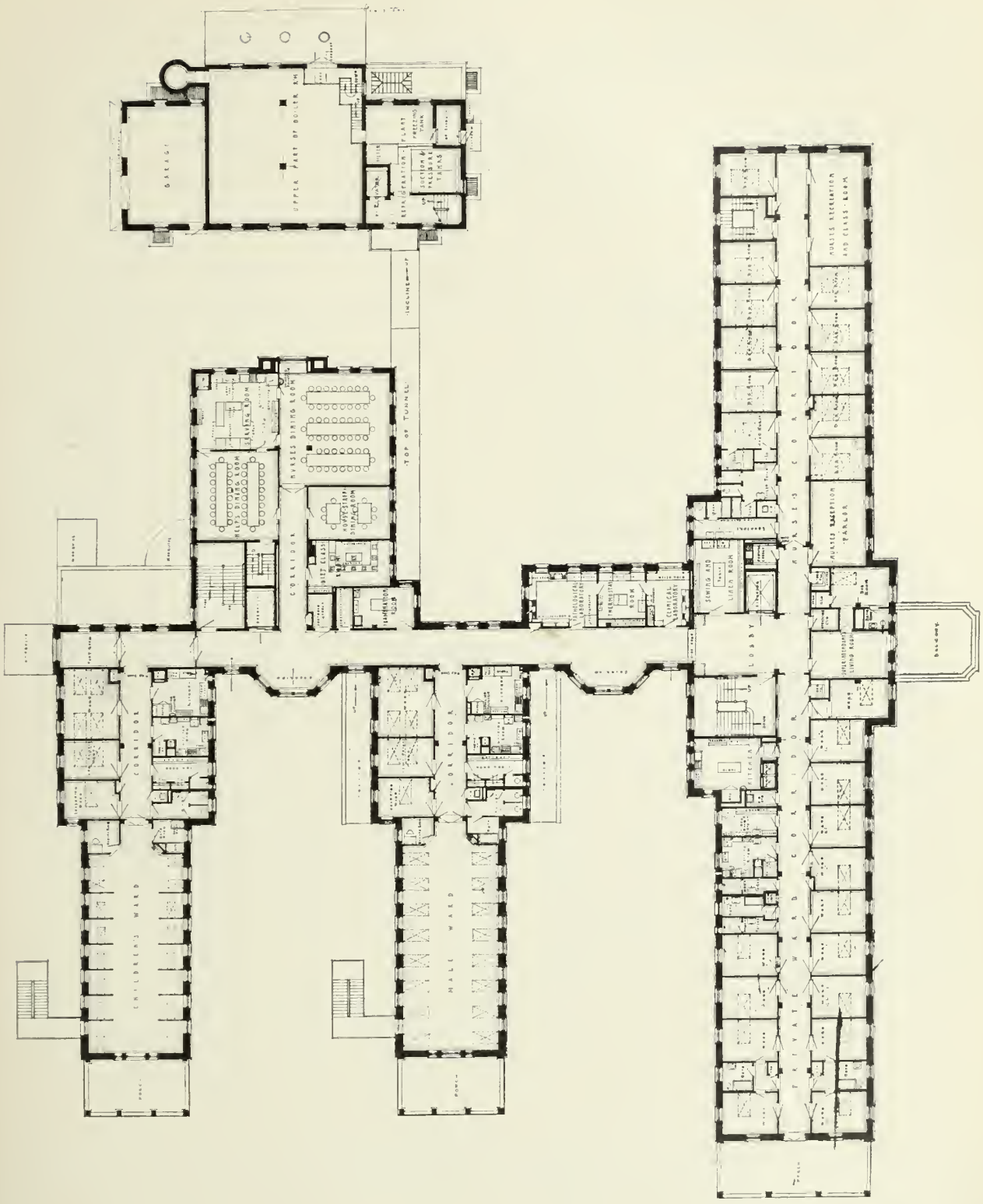



Fig. 3. Mount Sinai Hospital. First floor plan.

order stated, a general reception room, a private consultation room, an office for the principal of the nurses' training school, a coat room for the visiting staff, and a locker and dressing room for special or visiting nurses. Here, again, toilets and lavatories have been provided, intended for the use of the office staff and for visitors of the better class. At this point the corridor is cut off from the remainder of the floor, which is planned for the temporary use of male servants, for whom eight double rooms have been provided. As the hospital grows in size and as the demand for space for administrative purposes increases, these temporary dormitories can be absorbed by the bureau of administration, other provision being then made for the male help.

Attention has been called to the pharmacy and to the rear passage by which it communicates

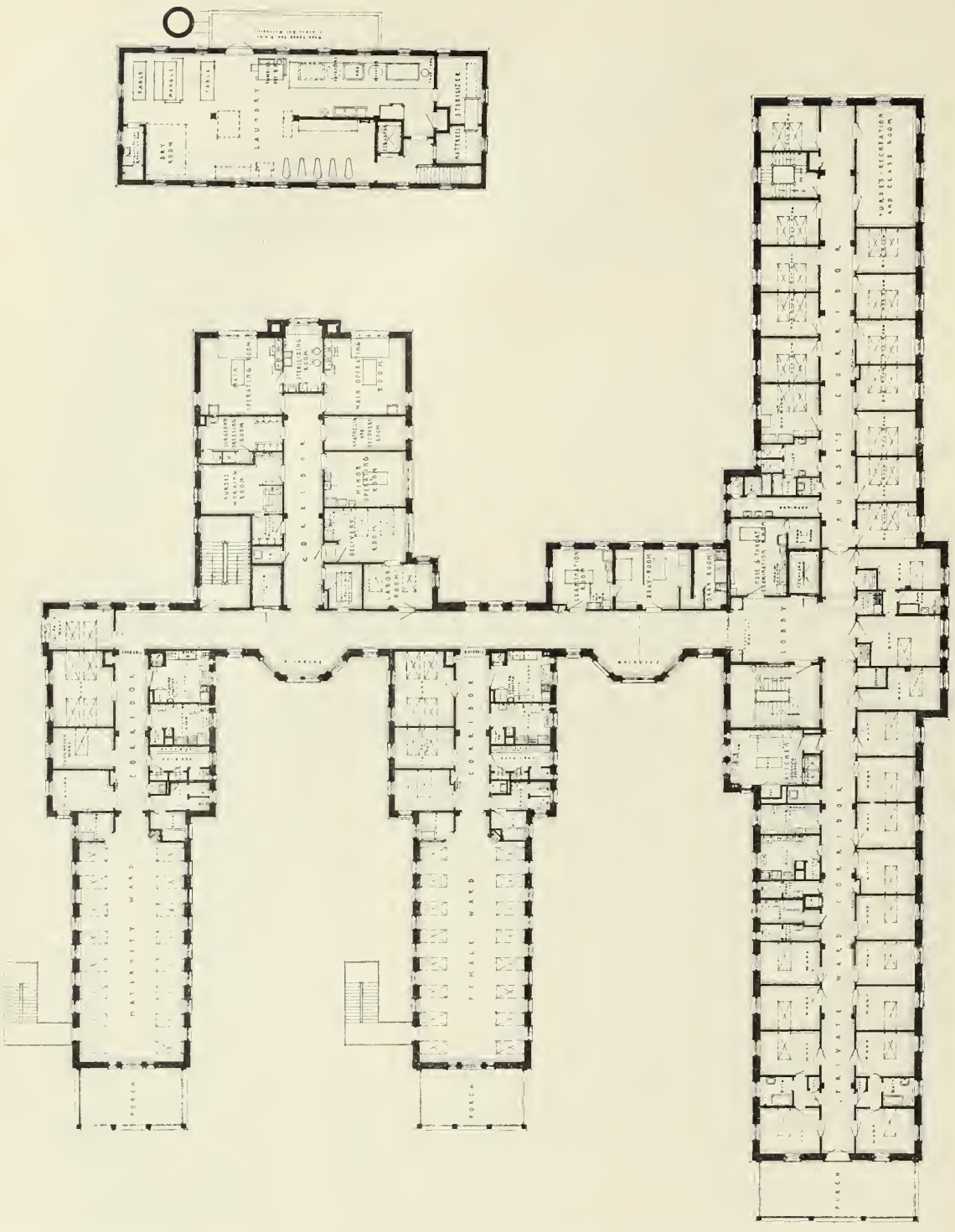


Fig. 4. Mount Sinai Hospital. Second floor plan.

with the principal service corridor of the hospital. This rear passage arrangement is duplicated in connection with the diet kitchen, where the trays for the private patients will be prepared.

From the square hall, directly behind the main entrance or lobby, one may enter the main service corridor of the hospital. From this corridor access is obtained to a group of separation or detention rooms, with direct outlet on the hospital yard, and to an emergency operating room, to which cases may be brought directly from the ambulance entrance at the northern extremity of the corridor or from the main hospital entrance. Beneath the wards, communicating directly with the main service corridor, are toilet rooms for male and female employees, a trunk room, storage rooms, and a patients' clothing room.

On the opposite side of the corridor are the main kitchen, with windows on three sides; and adjoining the kitchen, a bakery, a *kosher* or diet kitchen, butcher shop, and a refrigerator corridor with ice boxes for meats, vegetables, and dairy products. A separate entrance has been provided for receiving goods, with an office for the receiv-

ing clerk; adjoining this is an autopsy room, with a private exit to the hospital yard. This exit will not be interfered with in any way by the future extension of the main service corridor to the west.

The first floor plan shows, in the administration building, private rooms and accessories occupying the south wing, which terminates in a porch 14 by 40 feet. The service rooms have been massed in a section of this wing, which is least favored with sun exposure.

Directly over the main hall is a suite of rooms designed for occupancy by the resident superintendent or other resident official, but convertible, if desired, into a patient's suite.

The northern half of the second floor of the administration building forms part of the temporary nurses' residence, the remainder of the nurses' residence being located on the floor immediately above. This section of the building was designed for the use of private patients rather than for nurses, and is to be considered from this point of view. The nurses' reception room and the larger recreation room can easily be subdivided, the one into two and the other into three private rooms. The nurses' reception room can be entered directly from the central lobby in the administration building; in this room visitors will be received and entertained. The nurses' recreation room, however, has been located in the most remote part of the floor, as far away as possible from the rooms to be occupied by private patients. The nurses' bath rooms, toilets, and lavatories will later serve similar uses for private patients. One section, however, will be converted into a well-equipped utility room, corresponding to the utility room in the present private patients' wing; the great length of the building creates a need for two rooms of this character.

An interesting feature of the connecting corridor on this floor is its expansion, at two points, into recreation spaces or day rooms, overlooking the hospital lawn and lying respectively between the private patients' wing and the adult ward, and between the latter ward and the children's ward. Adjacent to the first of these day rooms or solaria is the suite of the pathological department, including a room for pathology, one for bacteriology, and one for clinical microscopy.

Directly over the main kitchen is a large serving room, from which the adjacent dining rooms can be directly reached. The dining rooms include one for nurses, one for servants, and one for administrative officers. The dining room for the servants, however, is shut off from the nurses' corridor, and is approached by a separate stairway from the service corridor on the ground floor. In this section of the building there have been placed a diet class room; a special medical examining room, which can be used in connection with the adjacent wards; a stretcher closet; and a portable tub closet.

Of the two wards on this level, the male ward is typical. The children's ward is similar in design, but subdivided by low glass screens into semi-inclosed individual cubicles. In the open ward there is space for 16 beds, and in the three side rooms of each ward seven additional patients can be accommodated. The ward terminates at its southern extremity in a porch. At the other end is a glass-inclosed nurses' office and chart room. Other conveniences are the patients' toilet and bath; cleaners' closet, with slop sink, linen, and supply room; nurses' toilet, utility room, and ward kitchen, all of which open on the private corridor, which meets at right angles the main or connecting corridor of the hospital. At the junction the main corridor is lighted and ventilated on its northern side by three windows.

The utility room plan, which has been used in this instance, is presented as a typical room suitable for general ward service anywhere. This room should have a width of not less than 10 feet, and, if arranged as shown in the accompanying plan, the door may be safely omitted, thus facilitating the movements of nurses. Ranged along the side of the room which is visible from the ward corridor are soiled clothes hamper, wash basin, instrument sterilizer, marble shelf with gas plate, utensil sterilizer, and a specimen closet with louvers. On the opposite side of the room a drying closet and blanket warmer are first provided, and in the recess behind these are placed the bedpan sink and a deep sink or tub with drain board.

On the next floor the general female ward and the maternity ward respectively are typical and require no further description, except that in the case of the maternity ward a side room serves as a nursery.

In the administration building the south wing, which is allotted to private patients, duplicates the arrangement of the floor below; the north wing, temporarily allotted to nurses, also corresponds substantially with the floor directly beneath it.

Adjoining the main lobby on this floor are a stretcher closet, a portable tub closet for the use of private patients, flower closet, with sink and shelves, and a nose and throat examining room, with adjoining dark room.

The x-ray department opens into the main connecting corridor, and is equally accessible from the administration building and the ward buildings.

The kitchen and service wing is devoted on this floor mainly to surgical purposes. In the final

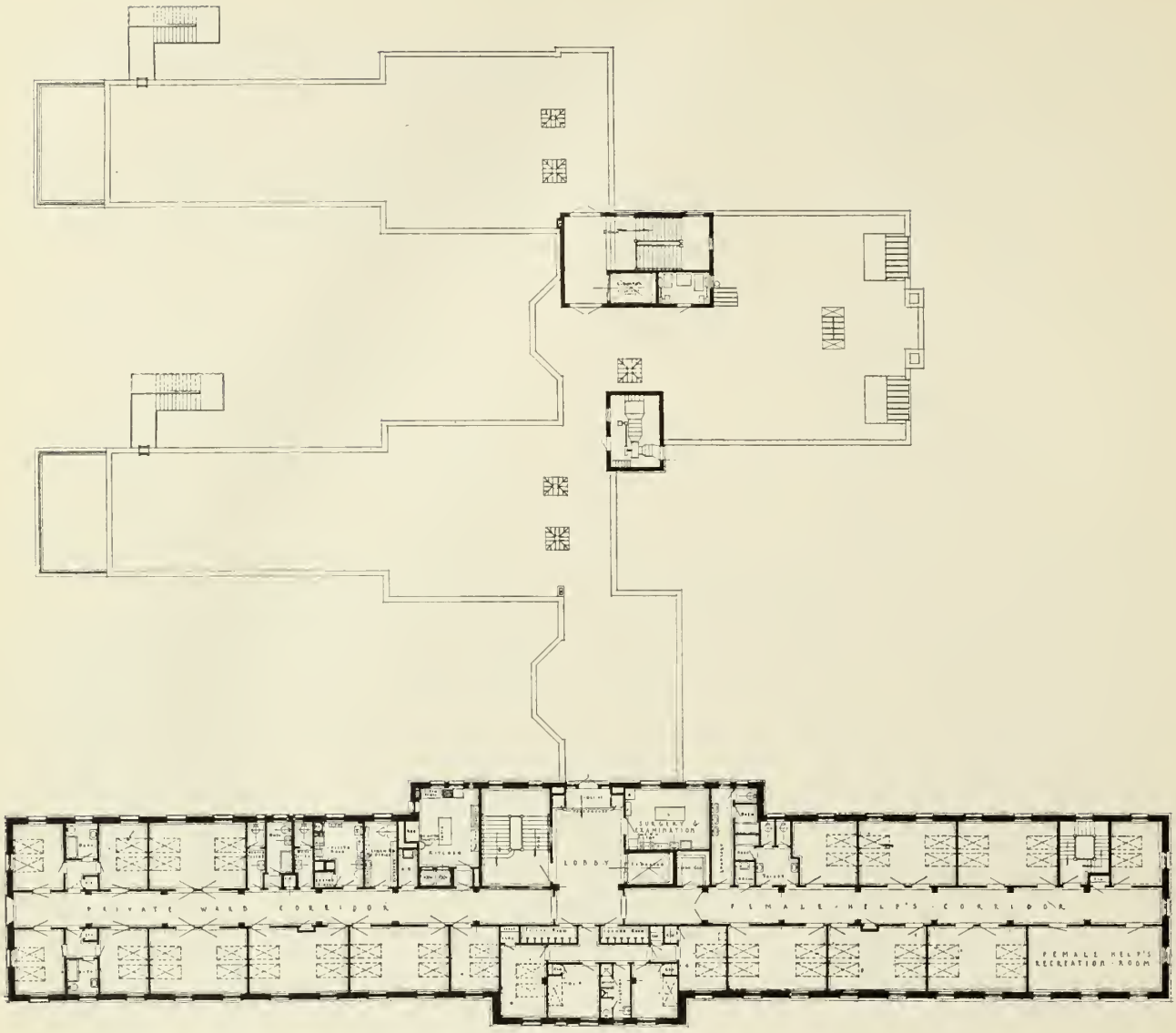



Fig. 5. Mount Sinai Hospital. Third floor plan.

arrangement of the hospital it is proposed that the wards on this level shall be surgical wards; direct corridor connection with the operating rooms, without elevator service, is thus provided.

The plan of the operating floor is simple and requires little explanation. There are two main operating rooms, both provided with ample north and top light; the sterilizing room lies between the two main operating rooms, and communicates with both. An anesthesia and recovery room, a surgeons' dressing room, a nurses' work room, a minor operating room, a nurses' dressing room, a consultation room, and a labor room and delivery room complete the surgical center.

The administrative building alone has three stories above the ground floor. It is divided into a wing for semiprivate patients and a wing which is temporarily occupied by servants, but which later is to become another semiprivate ward. In the middle section is a group of rooms with a private corridor for the medical house staff. Directly off the main or central lobby is a well-equipped examination and surgical dressing room, a valuable accessory to the semiprivate ward.

The simplicity of the boiler house is due to the fact that, in the opinion of the trustees, power for this Cleveland hospital can be purchased more cheaply than it could be independently produced; steam is generated for heating and sterilizing purposes, but the electric generating plant, which is a familiar feature of hospitals of the importance and size of the present one, is omitted. A garage and a garbage destructor are located in this building. The second floor of the boiler house is devoted almost entirely to laundry purposes, a small section being reserved for the mattress and clothes sterilizer.

In studying the accompanying plan, the reader is requested to note:

a. Its great elasticity.

b. The relation between the dispensary, social welfare department, and general office.

c. Location and relations of pharmacy.

d. The numerous conveniences afforded by the grouping of entrances, exits, and various departments about the central or communicating corridor.

e. The location of the kitchen and operating room wing, central to the completed hospital.

f. The readiness with which the hospital may be expanded to accommodate twice the present number of patients, almost without alteration of the buildings already completed.

g. The southern exposure of and the quiet and pleasant outlook from the wards.

h. The alternation of wings on either side of the communicating corridor, so as to provide good light and ventilation for this corridor throughout its length.

i. The readiness with which each department of the hospital can be expanded without regard to the other parts; for instance, additional accommodations may be provided for private patients, or for semiprivate patients, or for ward patients, or for dispensary patients, or for all four of these simultaneously; the laboratory can be increased independently of any other feature, and the same is true of the x-ray department, the laundry and power plant, the bureau of administration, the servants' dormitories, the kitchen, and the nurses' home.

Although this fire-proof hospital is durably constructed, well finished, highly subdivided, and fully equipped for the best possible kind of service; and notwithstanding the fact that 58 of the total of 154 beds are in the private patients' department, the total cost of construction, thanks to the alertness and business acumen of the building committee, is only $410,000, exclusive of fees. Furthermore, the projected additions to the plant will have the effect of materially reducing the average bed cost.

## SOME OF THE HOSPITAL STANDARDS OF TROPICAL AMERICA[1]

### Isthmian Canal Commission and the United Fruit Company Largely Responsible for Central American Health Activities—Some of the Hospitals

By B. W. CALDWELL, M. D., Superintendent, Hospital Santo Tomas, Panama; Hospital Administrator, American Red Cross Sanitary Commission to Serbia

HOSPITALS in the tropics, as elsewhere, are good, bad, or indifferent, dependent to a very large degree on the man or organization who originates and supports them. In tropical America the governments, as a rule, take great pride in their eleemosynary institutions, and build and equip excellent hospitals in the capitals and metropoli of their respective countries. The administration of the hospitals supported by the Latin-American governments varies largely with the character of the political party in power, although occasionally a modern well-managed hospital is found, in spite of an exceedingly bad existing government.

The medical profession in the tropics is individually and collectively of high order and ability. Usually the sons of wealthy men, whose families have for generations been educated in the best universities of Europe and America, the medical men of the tropics have had all the advantages which money, influence, time, and travel can confer in the pursuit of their professional education.

The best of them are usually educated in the universities of their native land, and after the completion of their academic course are sent to the medical schools in Paris, Munich, Vienna, and Berlin, or to the best of our own medical colleges, for the completion of their medical studies and to serve their internships. Medical literature and accomplishment are resplendent with the names of our brilliant Latin-American colleagues. From this class of medical men the staffs of the hospitals are selected, and in many hospitals in the tropics medical and surgical skill on a par with that of Europe and America is exhibited. The "bon marche" of their hospitals is a matter of professional pride among the physicians of tropical America, and by frequent visits to the medical centers of the world and to the noted hospitals of both continents they maintain a high order of medical skill, surgical technic, and administration.

The construction of hospitals in the tropics admits of the most essential advantages when built of wood and in the pavilion type of arrangement. The pavilions should be uniform in size and in detail, in no case more than two stories in height, and usually but a single story is preferable. This applies always when sufficient, well-located sites are available, without regard to high values of location, when economy of space makes concrete or masonry construction advisable in the interests of economy. But experience has taught that, for

[1]This paper was prepared by Dr. Caldwell last summer just before be left to join the American Red Cross forces for the fight on typhus in Serbia. The United Fruit Company illustrations were sent to THE MODERN HOSPITAL by Dr. R. E. Swigart only a few days before his death. For the Isthmian Canal Hospital pictures we are indebted to the Surgeon General's Library, Washington, D. C.

comfort, safety, sanitation, economy, and facility in administration, wooden construction of well-grouped, systematically arranged pavilions is much to be preferred.

The prime essentials in hospital construction in the tropics is the abundant and free circulation of air, beneath as well as above, around and through each building, without which the stay of the patient in the wards would become all but unbearable. Complete and effective screening against mosquitoes, flies, and other insects is an absolute necessity. Sunshine and natural drainage must be taken into full consideration and duly provided for, as more than one-half of each year is taken up by the rainy season in the tropics, and both buildings and grounds must be as free from dampness as possible. Shade and landscape improvement are easily provided for, as the tropical plants and trees are of rapid growth, and are things of beauty in their abundant foliage and rich blossoming. Artificial heat need never be taken into account, for in few places and only in the high altitudes is its provision necessary. Concrete buildings for hospitals must be constructed with their first floor laid on the earth itself, with heavy masonry walls, and this, with the always difficult arrangement for lighting and the admission of the sunshine, gives the atmosphere of their interiors a cold and damp character that is anything but desirable.

Fig. 1. View in Ancon Hospital grounds.

The lifetime of the wooden constructed hospital is easily twenty-five years, with reasonable care and upkeep, and the interest on the difference in the cost of construction of a hospital of wooden pavilions and one of concrete would in twenty-five years be sufficient to erect a new hospital at the end of that period along the more modern ideas of the later time. The maintenance is less expensive, for the reason that repairs and alterations of the concrete buildings are always attended with heavy expense, loss of time, and consequent inconvenience, while the necessary changes and repairs to wooden construction can be effected with a minimum of each.

A good type of hospital building for the tropics is one about 78 feet in length by 40 wide, and one story in height, erected upon concrete pillars, at least 3 feet above the ground at the end nearest the earth. These wards should be high enough to permit a 30-inch band of wire screening to be placed around the walls immediately next to the ceiling. The wards should be open wards, with an 8-foot veranda running entirely around each ward, and this veranda should be completely and effectively screened with small mesh wire screening. There should be abundant openings for windows, which should be provided with blinds, but which need not be screened. The verandas should be wide enough to permit the patients to spend as much time as possible, in their chairs or beds, upon them, for in the tropics the patients should live on these verandas and use the inside of the wards only for sleeping.

The openings in the wards proper should be sufficient in number and large enough to afford a maximum of soft, shaded light and the free circulation of air. The wards should be properly ceiled, but provision must be made to give ample vent to the cushion of hot air which invariably collects between the ceiling and the roof, and which adds much to the temperature of the ward when this precaution is neglected. Tile roofing is the best for comfort and appearance, although iron roofing can be used to advantage when tiles are not available. Provision must also be made for the prevention of the entrance of ants and other insects into the wooden structure, and this

Fig. 2. Isthmian Canal Commission sanatorium at Taboga Island.

can be easily accomplished by placing an iron or tin shield around each pillar, with a small canal running around the metal into which crude oil can be poured. This arrangement is inexpensive and effective.

To the side of each ward and just off the veranda the bath and water-closet arrangements are installed, and the disposal of wastes is effected with a minimum of trouble and expense, and the essentials of cleanliness, sanitation, and the free circulation of air are obtained with little difficulty. The pavilions are arranged on either side of a central line of buildings, on which line are placed in order the administration building, admitting ward, operating room, and laboratory. One side of the hospital is for the male and the other for the female patients. The pavilions are arranged in rows, with their bases resting on a semicircle and the rows diverging as they lengthen. No row of buildings should be nearer than 70 feet to the next row, and at least 35 feet should intervene between the ends of pavilions. The intervening space should be covered and screened, and can be utilized for ward laboratories, nurses' offices, and dining room.

On each side of the hospital a contagion ward should be provided, at least two-thirds in size of the other pavilions, and otherwise identical in construction, with the exception that its interior should be divided into equal spaces, screened from

Fig. 3. Isthmian Canal Commission hospital at Colon.

floor to ceiling, and sufficiently large in area to contain a bed for the patient, and a bedside table, and to give sufficient space for the free movement of the doctor or nurse without coming into contact with the furniture of the room.

At the farther end of the row of pavilions a line of buildings devoted to the use of store rooms, carpenter shop, kitchens, electric light and ice plant should be constructed, and at the farthest end the laundry. All of these should be of wood, except the store rooms and the light and ice plant.

When the Americans took charge of the Panama Canal work, the most serious problem which confronted the commission was the care and comfort of the men who were to be employed. The failure

Fig. 4. Palo Seco leper colony from the bay.

of the French to complete the canal was due more to their inability to prevent the heavy morbidity and mortality from disease, with the attendant loss of efficiency and "d'esprit de corps," than to lack of money, machinery, or any other cause. If their records are to be depended on, the French lost more men in a single year than the Americans lost in the entire ten years of their construction period. Sanitation without proper hospitalization would have been impossible in Panama as elsewhere. The master genius who instituted, directed, and controlled sanitation on the isthmus from the time before the first steam shovel began to move the reluctant earth until the canal was practically completed recognized this principle from the first. General Gorgas' first thought and care was for the health and comfort of the employees on the work, and to him and to his assistants, Colonel John L. Phillips, of the Army Medical Corps, and Surgeon H. R. Carter, of the Public Health and Marine Hospital Service, is due the credit of establishing and maintaining the most complete and efficacious system of hospitalization, and under the greatest difficulties, that has ever been instituted in any time or at any place.

To these three able administrators and master sanitarians the world owes the construction of the Panama Canal, the employees owe the good health and the careful attention which they and their families enjoyed during the period of their employment in Panama, and medicine and sanitation its greatest gratitude for the lessons which

these three taught and demonstrated by their work.

It is a feat without parallel in medical or sanitary history that General Gorgas accomplished when he cleaned up the Panama hotbed of yellow fever and other pestilence, and for ten years did not permit an epidemic of any disease to gain a foothold there. He changed the mental attitude of the employees from that of insecurity and fear

Fig. 5. A "street" in the native village of Bocas del Toro, Panama, when the United Fruit Company went there to establish health conditions.

which existed in 1905 and 1906 to one of peace of mind and security. He made them know and feel that they could live and work in Panama with the same security of health that they would enjoy in their homes in the states. The work was not interrupted for a single hour during these ten years because of pestilence or epidemic. Such was the materialization of the theory of applied sanitation, the demonstration of the possibilities of sanitary effort, the like of which will probably never again be repeated.

The Americans found on their entrance into Panama the hospitals of the French regime in bad physical condition, and only two of them in serviceable condition of repair. Several were dilapidated, and in one or two instances only masonry pillars were left to mark the sites of important French hospitals.

At once General Gorgas systematized the hospitalization. He repaired and enlarged the old French plant at Ancon, and instituted a base hospital which at the time of the maximum employment of labor contained 1,200 patients. He surrounded himself with the best medical, surgical, and scientific talent he could secure. He secured a distinguished and efficient staff for this great hospital, and magnificently equipped it in every way. He built at Colon another base hospital, with a capacity of 700 patients, and he divided the intervening zone into districts, where hospitals of greater or less capacity were maintained under the direction of a competent medical officer.

An insane asylum was built and maintained, and a few miles up the coast from Panama a site was selected for a leper lazar, and a home was built where these unfortunates could live with the greatest comfort and freedom for themselves consistent with safety for the community at large. Across Panama Bay, on Toboga Island, a large sanatorium was maintained, where the sick or injured employee could convalesce, in the caressing breeze of the Pacific and far from the noise of the work.

Not a single case of illness among the employee or civil population was permitted to go unreported or unattended. A competent physician at once took charge of the patient wherever he became ill, and held the case under observation until the diagnosis determined whether he should be removed to the base hospital or could be safely treated in the local hospital or his own home. Every case of contagious disease was held and isolated, and the community protected from the spread of the disease.

An effective quarantine on vessels calling at all Panama ports was maintained under Surgeon J. H. Perry, one of the most efficient men in the Public Health and Marine Hospital Service. No member of the crew or passenger on any vessel was permitted to land without satisfying the examining quarantine officer that all was well. The quarantine service maintained a hospital and isolation camp on either side of the canal, and not a single case of quarantinable disease was permitted to enter Panama or the Canal Zone.

The private hospitals in the tropics where they

Fig. 6. The same "street" shown in Fig. 5 after the sanitary work of the United Fruit Company was completed.

are worthy of the name are, as a rule, well constructed, well equipped, and properly managed. The care the patients receive in them is as good as they would receive in any similar institution anywhere. The buildings are pleasantly located, the staffs experienced and efficient, and the nursing beyond criticism.

In the English and French colonies the government maintains good, serviceable hospitals, where

excellent laboratories are to be found and much research work in tropical medicine is being done. Many of the medical officers in these hospitals are sent from the schools of tropical medicine in London and Liverpool, and are skilled physicians and surgeons as well as scientists. Tropical medicine owes much to these splendid medical officers of the English colonial hospitals.

The most complete system of hospitals as well

Fig. 7. United Fruit Company's hospital for white patients at Bocas del Toro, Panama. This site was an impenetrable swamp.

as the most extensive existing in the tropics is that which the United Fruit Company maintains for the care of its labor on its banana plantations. Under the very able and efficient directorship of the late Dr. R. E. Swigart this company built in Cuba, Guatemala, Honduras, Costa Rica, Panama, and Colombia, wherever their immense plantations are located, modern complete hospitals. Dr. Swigart, in a most careful manner, equipped them with everything that a well-managed hospital needs. He supplied each of them with the best superintendent and staff which a more liberal salary could command, and with a sufficient nursing force that is as generously paid. The results which this great system of hospitals has obtained in its care of the thousands of laborers on the company's plantations is on a par with that obtained by the Sanitary Department in the Canal Zone.

In connection with this magnificent group of hospitals, well-organized laboratories are maintained under the directorship of Professor Richard P. Strong, of the School of Tropical Medicine at Harvard. In these laboratories research work in tropical medicine of the highest order is being done, and not only the United Fruit Company, but the entire medical world, is receiving most valuable returns from this very important branch of scientific endeavor.

Another class of hospitals in the tropics are those which are operated and maintained by the great centros in Cuba. The largest and probably the best is the Centro de Gallegos de Habana, with its membership of over 40,000. Each member, in addition to an initiation fee, pays monthly dues of a comparatively small sum, in return for which he receives, among other things, the privileges of the finest club in Havana, access to schools of instruction in the languages or almost any other subject, legal advice when necessary, the care of a competent physician when ill, and free admission to a hospital. These large centros are immensely wealthy, and enjoy a large monthly income. They own and operate their hospitals, and money is not spared in securing care and comfort for their sick in hospitals and in the proper equipping and maintaining of the institutions. The staffs are invariably well selected, and everything possible which makes for efficiency is worked out. The patients receive the best attention, and the administration of these hospitals is on the same scientific basis as the society itself.

Our tropical friends are beginning to build great hospitals. Each year sees more and better hospitals under construction. They are doing a great

Fig. 8. United Fruit Company's new hospital at Quirigua, Guatemala. The perfectly screened houses of officers, cottages for minor employees and camps for laborers, with their cleanly environments, conform in sanitary requirements to the recently erected concrete and steel hospital, perfect in detail, the finest structure of its kind found anywhere and accommodating 150 patients of all classes, with corridor space for an overflow if necessary.

work in the best way they know. Often hampered by lack of funds and sometimes interfered with by indifferent politicians, in spite of all these impediments they are making great progress. Their field is wide and useful, and the mission they are fulfilling is as great as humanity itself, for in the tropics great wealth is possessed by the very few, and hospitals there are run not for gain, but for the best rewards which sweet charity can bestow.

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The most ancient form of Christian benevolent institutions is the xenodochium hospital, originally a lodging house for pilgrims and strangers, and later used for orphans, the poor, and the sick. Originally institutions of hospitality and charity, established in monasteries and in cities under Episcopal domination, they became in the course of time independent institutions, though they continued to be closely connected with the Church and the monasteries, which is evident from their ecclesiastical supervision and from the religious life and service that prevailed.

# ACTUAL VALUES IN THE NAUHEIM BATH SYSTEM

## A Study Comparing the Famous German System With the Saratoga Baths Favorable to the Latter—Gas or Salts as Remedial Agents

By CHARLES G. ANTHONY, C. E., Consulting Engineer, Saratoga Springs, New York

ON December 24, 1913, the commissioners of the state reservation at Saratoga Springs ordered me to investigate several European spas. In compliance with these orders I visited Vichy, Brückenau, Wiesbaden, Nauheim, Kissingen, Harrogate, Bath, and Homburg. Several days were spent at Nauheim in investigating the Nauheim system of baths, with special attention to the mechanical equipment. After my return to Saratoga Springs, experiments were carried on for two years with the Saratoga waters in order that we might, if possible, equal the Nauheim baths. At the same time careful experiments were made with the artificial Nauheim baths, and comparisons were drawn between these and the Nauheim and the Saratoga baths.

### NAUHEIM BATHS

Dr. Albert Warren Ferris, superintending director for the commissioners at Saratoga Springs, says that in 1859 Beneke told the medical profession that baths given with carbonated water exerted a favorable influence on certain circulatory conditions. Since that time the treatment has been thoroughly studied, and in 1880 August Schott perfected a recognized system of baths. This original system has undergone evolutionary changes until there is now a definite method of care for cases of the heart and arterial degeneration, comprising $CO_2$ baths, diet, and exercise, and it is known as the "Nauheim system." It takes its name from the name of the German town where it was elaborated, Bad-Neuheim.

That this system should claim the attention of the entire medical profession is shown by the fact that a medical examination of all the employees of a New York city bank ended in the surprising results summarized in the following quotation from the report rendered by the physicians making the examination: "100 percent of the employees were found to be abnormal, and on the sure road to diseases of the heart, lungs, kidneys, or blood vessels."

The death rate from diseases of the heart and kidneys has practically doubled in the past thirty years. Dr. S. S. Goldwater, health commissioner of New York city, commenting on the fact, said: "We certainly know how to recognize these diseases in their earlier stages, long before the victims are incapacitated, and in a large percentage of cases we can postpone their development, promote the comfort of the individual and prolong his working life."

Dr. Ferris says: "We know that degenerative changes in the heart muscles are due largely to errors in diet and resulting digestive disorders; to infectious diseases, such as diphtheria, rheumatism, typhoid fever, pneumonia, and disturbances in secretion, such as kidney diseases. Many cases of such degenerative changes are secondary to valvular lesions. The term arteriosclerosis, or, popularly, 'hardening of the arteries,' has become 'as familiar as a household word.' A better term is 'arterial degeneration,' and we must consider it in connection with heart degeneration, for it is largely due to intestinal putrefaction and to the presence of certain bacteria in the intestines, caused primarily by improper diet. Anxiety and worry always accelerate arterial degeneration. There is a very large nervous element in its progress and production. The hardworking, overfed, underslept business man is especially liable to arteriosclerosis. Its early detection, therefore, is of prime importance; for, if the Nauheim system be employed in the early stages, the results are often satisfactory."

Dr. Simon Baruch, of New York, made a trip to Bad-Nauheim to study the Nauheim system in the interests of the commissioners of the state reservation at Saratoga Springs, and submitted a very interesting report. He is now an ardent advocate of the system.

The principal therapeutic factors at Bad-Nauheim are the three saline springs, having a temperature of from 29.9 degrees to 34.4 degrees. These springs are used for the baths, and the waters are rich in $CO_2$ gas; but, as will be shown later, they do not contain as much gas as the waters from the springs at Saratoga. The Nauheim springs Nos. 7, 12, and 14 are 159.5, 180.0, and 209.5 meters deep respectively. The analyses for these three springs, as well as for the three Saratoga springs which are used for bathing, are given in the appended table.

The Nauheim course consists of a series of baths made up of a combination of the following four baths:

The brine bath, with regulated salts, no $CO_2$ (Soolbad).

The thermal bath (Thermalbad).

The thermal effervescent bath (Thermalsprudelbad).

| Chemical Combinations | Saratoga Springs | | | Bad-Nauheim | | |
|---|---|---|---|---|---|---|
| | Lincoln | High Rock | Hathorn No. 1 | Sprudel No. 7 | Sprudel No. 12 | Sprudel No. 14 |
| Ammonium chloride | 11.93 | 5.73 | 23.74 | 50.80 | 57.50 | 75.30 |
| Lithium chloride | 27.62 | 31.48 | 27.55 | 56.00 | 62.60 | 40.50 |
| Potassium chloride | 463.52 | 73.42 | 503.50 | 595.30 | 838.10 | 643.60 |
| Sodium chloride | 3,136.35 | 325.63 | 3,662.99 | 19,540.20 | 27,152.50 | 22,709.00 |
| Potassium bromide | 19.50 | 8.30 | 22.00 | ..... | ..... | ..... |
| Potassium iodide | 1.00 | 2.10 | 1.50 | ..... | ..... | ..... |
| Sodium sulphate | trace | 45.03 | 6.54 | ..... | ..... | ..... |
| Sodium metaborate | trace | trace | trace | ..... | ..... | ..... |
| Sodium nitrate | trace | 3.21 | 0.12 | ..... | ..... | ..... |
| Sodium nitrite | trace | trace | trace | ..... | ..... | ..... |
| Potassium bicarbonate | none | none | none | ..... | ..... | ..... |
| Sodium bicarbonate | 1,368.99 | 889.13 | 490.05 | ..... | ..... | ..... |
| Barium bicarbonate | 7.12 | 1.24 | 10.45 | ..... | ..... | ..... |
| Strontium bicarbonate | trace | none | trace | 30.20 | 50.00 | 45.60 |
| Magnesium bicarbonate | 1,301.02 | 438.40 | 1,335.59 | ..... | ..... | ..... |
| Calcium bicarbonate | 1,887.10 | 1,226.83 | 2,288.92 | 2,489.40 | 1,795.30 | 1,601.90 |
| Ferrous bicarbonate | 39.81 | 55.05 | 27.26 | 21.80 | 28.90 | 30.90 |
| Mangano manganic oxide | none | none | none | ..... | ..... | ..... |
| Alumina | 15.12 | 3.60 | 1.77 | ..... | ..... | ..... |
| Silica | 44.10 | 25.30 | 12.75 | 16.40 | 19.40 | 17.30 |
| Sodium bromide | ..... | ..... | ..... | 9.00 | 12.20 | 17.00 |
| Calcium chloride | ..... | ..... | ..... | 1,364.30 | 2,761.90 | 2,449.30 |
| Magnesium chloride | ..... | ..... | ..... | 394.80 | 528.10 | 466.30 |
| Mangano bicarbonate | ..... | ..... | ..... | 6.30 | 5.20 | 4.10 |
| Dinatrium phosphate | ..... | ..... | ..... | .40 | .40 | .50 |
| Dinatrium arsenate | ..... | ..... | ..... | .90 | .70 | .80 |
| Potassium sulphate | ..... | ..... | ..... | 65.20 | 81.80 | 78.70 |
| Total solids | 8,323.18 | 3,134.25 | 8,414.73 | 24,641.00 | 33,394.60 | 28,180.80 |

The effervescent bath (Sprudelbad).

For the first, or brine, bath, only spring No. 7 is used, while the other three kinds of baths can be given from any of the three springs. The thermal baths are prepared from water thrown up from the springs into large open reservoirs, where it stands for several hours and the gas is allowed to escape. My objection to this procedure is that as soon as the gas escapes, the bicarbonates change to insoluble carbonates and the water takes on a dirty red color. Where we did the same thing at Saratoga, a great many patients hesitated to take the bath. It is true that a bath in anything but crystal clear water jars the esthetic sensibilities of the average American, and the psychological effect of a bath in dirty red water is objectionable.

Some of the water from any of the three springs is carried under the ground to closed tanks, from which it is conducted to the bath tubs. This water from the closed tanks furnishes the so-called thermalsprudel baths, while the water which flows directly out of the earth to the bath tubs forms the sprudel baths. The thermal effervescent water is not so highly carbonated as the effervescent bath, for some of the gas has been allowed to escape through the walls of the storage reservoir.

Naturally, there is no fixed system used in prescribing the baths. The individual needs of the patient govern the course of treatment. The patient may be started with the thermal bath and never progress beyond this bath. Others may be started with the thermal effervescent and then progress to the effervescent bath, and, again, some patients may receive all four baths. The treatment extends over a period of from three to eight weeks. I will show that the Nauheim management have not made the most of their possibilities. I will point out their shortcomings and show where the baths given at Saratoga are superior to those of Nauheim, and will also show that the artificial baths cannot equal those at Nauheim, and are far behind the baths given at Saratoga.

To prove my contention, it is necessary for the reader to understand some chemical, physical, and mechanical features in regard to the $CO_2$ gas and the equipment used in giving these baths. In mineral water I consider the gas to exist in four conditions: (1) fixed gas, (2) partially fixed, (3) gas in solution, (4) gas as a bubble.

1. The fixed gas is found in the carbonates, and exists in the mineral matter, even after the water be evaporated to dryness.

2. The partially fixed gas is found in the bicarbonates, and can be liberated by heating the water, thus breaking down the bicarbonates to carbonates.

3. Gas in solution I consider as gas absorbed by the water, and I regard it as in two parts—one part of this gas in solution completely saturates the water, while the other part I regard as supersaturation. The gas forming the supersaturation can be driven from the water by agitating it. Water saturated with $CO_2$ gas may not show any signs of effervescence and be absolutely quiescent, yet when shaken slightly it may boil and effervesce vigorously. The part of the gas which is in solution cannot be driven off by shaking, but can be liberated by heating the water.

4. Where the gas exists as a bubble, the water is supersaturated, or else the gas has not had time to go into solution and has simply displaced some of the water. This gas is not combined with the water, and immediately rises to the top and disappears into the atmosphere. A liter of pure water at 0 degrees C. and 760 mm. barometer can absorb and hold in solution 1.713 liters of $CO_2$. Every

increase in temperature or increase in salts decreases the absorbing power of the water. For example, salt water, with 3.34 percent of salt and a temperature of 31.9 degrees C. and 760 mm. barometer, can hold in solution but 0.56 liters of $CO_2$, not quite one-third as much as fresh water can absorb and hold under the same temperature and pressure conditions; yet it is possible to supersaturate this water and make it contain more gas than it would contain under normal conditions. It is around this discovery and theory that the Saratoga apparatus has been constructed, resulting in the strongest carbonated bath in the world.

At Nauheim the oversaturation, or supersaturation, is accomplished by nature in the earth, and depends on the hydrostatic pressure exerted by the superimposed ground water. My objection to the Nauheim method is that they pipe the water direct from the spring to the tub, and large quantities of free gas are carried in the pipes, causing a churning and pulsating condition which shakes out a large quantity of the supersaturation. This objectionable feature is eliminated at Saratoga, and the result is a much larger content of gas in the water available in the bath.

It will be of particular interest to physicians to know the relative carbonic acid content of the three most important kinds of baths—the effervescent, the thermal effervescent, and the thermal—and to compare these results with the Saratoga baths and the artificial Nauheim baths. To make this clear, the averages from a number of tests on Spring No. 12 at Nauheim are recorded. For the weight analyses of the carbonic acid, the samples of water were taken the same day—

1. Directly at the spring.
2. From the middle of the tub filled with effervescent water (Sprudelbad).
3. From the middle of the tub of thermal effervescent water (Thermalsprudelbad).
4. From the middle of the tub of thermal water (Thermalbad).

will contain 560 cc. of $CO_2$ gas under normal conditions, so that it is seen that the supersaturation is 24 percent, while the thermal effervescent bath has practically a saturated solution, and the thermal bath about a half-saturated solution of carbonic acid. Thus, in comparisons between the Nauheim, the Saratoga, and the artificial baths, it is necessary to compare only the supersaturations; for, if the water be supersaturated, we know that the other conditions of fixed gas and saturation are satisfied. The following table shows the results of my experiments in Europe and at Saratoga:

| Bath | Supersaturation |
|---|---|
| Bad-Nauheim | 25% |
| Bad-Homburg | 38% |
| Bad-Kissingen | 45% |
| Brückenau | 50% |
| High Rock baths (Saratoga) | 31% |
| Kayaderosseras baths (Saratoga) | 33% |
| Lincoln baths | 55% |
| Artificial Nauheim baths | 7% to 15% |

It will be seen from these results that several European spas have a higher gas content than has Bad-Nauheim, and that at the Lincoln bath house, Saratoga, is the highest supersaturation ever obtained. The artificial baths are a poor makeshift, and do not contain enough gas to be of much value.

It is interesting to note that at the six places named as having stronger baths than at Nauheim, pumps are used to force the water from the springs to the bath house, and the uniformly high results are obtained because they pump the water with long-slow-stroke pumps, holding the water under pressure and forcing it through large pipes, free from right-angled bends, without agitation and against a minimum friction head. At Nauheim the low supersaturation is obtained because the springs flow direct to the tubs, with a heaving effervescence and pulsating movement that destroy the supersaturation by agitation. At the other spas in Europe they control the springs, while at Nauheim the springs are in control.

IN 1,000 CUBIC CENTIMETERS OF WATER

| Sample taken | Entire carbonic acid | Active $CO_2$, either free or half combined | $CO_2$, completely free | Temperature |
|---|---|---|---|---|
| Spring | 4.333 gm. | 3.586 gm. 2,042 cc. | 2.839 gm. 1,617 cc. | 33.1 C. |
| Effervescent bath | 2.7147 gm. | 1.9677 gm. 1,116 cc. | 1.2207 gm. 693 cc. | 31.9 C. |
| Thermal effervescent bath | 2.4661 gm. | 1.7191 gm. 970 cc. | 0.9721 gm. 549 cc. | 30.6 C. |
| Thermal bath | ? | ? ? | 0.4608 gm. 260 cc. | 29.6 C. |

In order that physicians may compare these results with those obtained from the Saratoga baths, I will record the principal features of these in data of another form. From the above table it is seen that the strongest bath, the effervescent bath, contains 693 cc. of free gas in 1,000 cc., or one liter, of water. Now, one liter of this salt water

At Saratoga the largest supersaturation has been obtained because a plant was constructed wherein the water moves slowly through a hermetically sealed system, under high pressure. A pump is placed in the well at a depth where the pressure equals fifty pounds per square inch, and the water is moved from this point slowly, under

constant pressure, and with a minimum of friction. As the gas content varies directly as the pressure, a maximum saturation is obtained, and it is under absolute control at all times. Another advantage at Saratoga is that the water is taken to the tubs cold, and heated in the tubs in about one and one-half minutes. This method liberates some of the gas in solution, as well as some of the partially fixed gas, for the rise in temperature breaks down some of the bicarbonates. Consequently the supersaturation, the gas in solution, and the partially fixed gas are available for bathing purposes. At Nauheim the supersaturation only is available for bathing, for these are thermal springs, and baths are given at the temperature of the water. They are unfortunate in that they cannot use the gas held in the water at atmospheric pressure and that partially bound in the bicarbonates, as we do at Saratoga.

In a small pamphlet published by the grand ducal administration at Nauheim I find the following statement: "Most European spas have cold springs, and are obliged to heat the waters for the baths and to pump it as well. With such disadvantages it is not likely that they can give baths of the same therapeutic value as those of the naturally thermal effervescent springs at Nauheim." Strangely enough, these are the very reasons why better baths can be given at other places than at Nauheim.

The following table shows just how much gas is lost between the spring and the tub, and this loss is entirely due to the method of piping the water direct from the spring to the tub without any control, such as would be exerted by a pressure system, governed at all times by automatic pumps:

IN 1,000 CUBIC CENTIMETERS OF WATER

| Tests | Active $CO_2$, absolutely free and part combined | $CO_2$, which is absolutely free | Temperature |
|---|---|---|---|
| At the overflow pipe of the spring | 3.6212 gm. 2051 cc. | 2.8733 gm. 1636 cc. | 32.98 C. |
| As the water comes into the tub | 2.3029 gm. 1307 cc. | 1.5560 gm. 882 cc. | 31.70 C. |
| In the tub when filled | 1.9165 gm. 1088 cc. | 1.1686 gm. 690 cc. | 31.70 C. |
| After the bath has been taken | 1.8163 gm. 1031 cc. | 1.0683 gm. 606 cc. | 31.60 C. |

When the tub is filled, 690 cc. of gas are available in every 1,000 cc. of water, which gives a supersaturation of 23.7 percent. In other words, they have lost 66 percent of the gas at the spring and 57 percent of the absolutely free gas, which is the only gas available for bathing purposes. In the system as used at Saratoga we lose only 5 percent of the supersaturation.

The physicians at Nauheim claim that the most important medical agencies, aside from $CO_2$ gas, are sodium chloride and calcium chloride. It is certain from the given analyses that the three springs are high in these two salts. Ninety percent of all the other physicians interviewed in Europe at the other spas say that the efficiency of the Nauheim bath system depends on the $CO_2$ gas alone and not on the above-named salts, and the results obtained at Saratoga, with waters higher in gas, but lower in salts, than these, were so uniformly good that I am convinced that the cures obtained with this system are due to the large gas content in the water.

Dr. Ferris says: "The chlorides dissolved in the water simply serve to cause a primary excitation of the skin, resulting in the dilatation of the capillaries and the smallest terminal arterioles. The carbonic acid gas exerts a profoundly stimulating effect on the skin and on the sensory nerves, through these reaching not only the nerve centers, but also by radiation and reflex action the entire nervous system. On the heart and circulation these effervescing baths have a special action. The baths increase the capacity of the cutaneous vessels and distribute a large quantity of blood over the entire skin surface, thus lessening the demands made on the cardiac muscle. The $CO_2$ accomplishes by far the major part of the results obtained, regardless of the amount of chlorides in the water. It is the principal agent."

Over 10,000 baths were given last summer with our natural mineral water, enough to serve as a good criterion from which to draw conclusions from our results here at Saratoga Springs. Additional salts can, however, always be added to a carbonated bath if desired by the physician. Care should be taken to put the salts in as a brine and not as a crystal, as the crystal salts draw out some of the gas.

In the preparation of baths for the Nauheim system by the use of artificial salts, it has long been the desire to obtain a bath which would retain its gas in order to promote higher efficiency. In order to accomplish this result manufacturers of artificial baths have tried various methods. Some first dissolve a portion of the salts in the water, to be followed by the addition of a liquid after the patient has entered the tub. The addition of this liquid is the means of liberating the gas required for the bath, and the liquid is always a strong acid. Others furnish two packages of salts, one of which is dissolved in the tub and contains the acid; the other package is divided into three parts, each part contained in a small bag to be hung over the side of the tub at intervals

along its length. The idea in this is to distribute the production of gas over the various parts of the tub and to prolong as much as possible the liberation of the gas.

No matter how they are administered, the different preparations in use all depend on the same principle—the breaking down of some bicarbonate or carbonate salt with an acid; and they all give the same results—a bath in which the carbon dioxid is liberated rapidly and in large bubbles, the production of which soon ceases. But this is not the worst feature of such baths. The practice of exposing the body to an acid bath, a condition which is certain to exist in this type of treatment except at the moment when the effervescence ceases, is indeed a dangerous one, for it produces a superficial burn. The following are the results of experiments made, using one of the very popular artificial bath combinations and preparing it according to directions on the label:

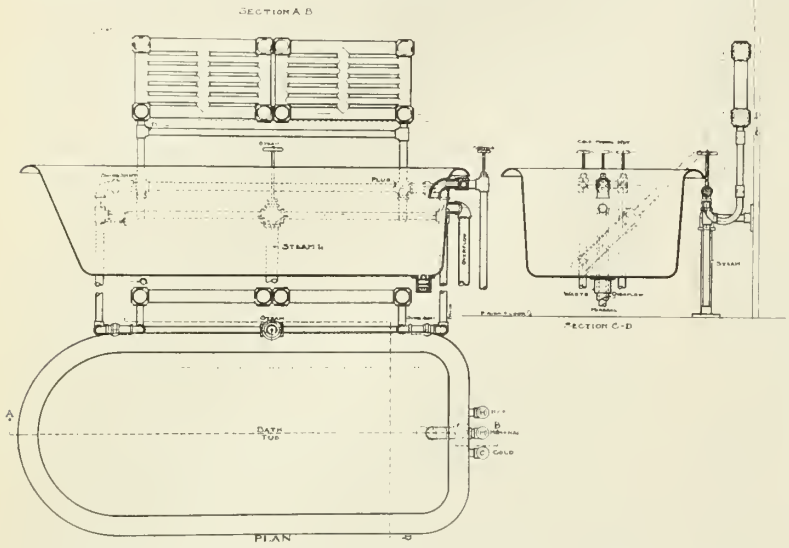


Fig. 1. Bath tub, showing water and steam connections; also hinged copper coil, which is swung down into the mineral water when drawn in the tub and heats the bath in one and one-half minutes without admixture of fresh hot water. This coil reclines in protective cabinet against the wall until the tub is full and steam is turned on, and acts as radiator for bath room in cold weather.

There was formed by the interaction of the compounds, 182.1 liters of $CO_2$ gas, of which 151.4 liters remained in solution because of atmospheric pressure, leaving only 30.7 liters as free gas. This amount of free gas represents that which goes off in the form of bubbles and that which is present as supersaturation. There is a total of 16.3 percent of gas that is actually available for the beneficial effects of the bath, of which only 5 percent to 7 percent is supersaturation. The final reaction of the bath, after effervescence had ceased, was acid, the strength of the solution being equivalent to 1/10 normal solution. It can readily be seen that this bath is not efficient, and, furthermore, that it is not to be desired because of its acid condition.

The label directs its use as follows: "Prepare the bath by using tepid water, 92 to 94 degrees F. Put the powder, disturbing the water as little as possible, in the middle of the tub, step in the bath and pour the contents of the bottle slowly, at arm's length, over as much of the surface of the water as possible. This bottle contains a concentrated acid, and the patient is likely to get a very strong acid bath at some time during the manipulation in the tub.

There is no way of obtaining a solution that has the required supersaturation of gas—25 percent—by dissolving salts in a bath tub and liberating the gas with an acid. Bath water, in order to show such a high supersaturation of gas, and gas that is in a finely divided state, must be subjected to pressure. I have designed an apparatus for this purpose, by the use of which a carbon dioxid bath, containing the salts required by the Nauheim system, can be prepared in ten minutes in any home, and one that will show a supersaturation of 36 percent after standing half an hour. The use of acid is avoided and the cost is reduced to about 25 cents per bath. Actual tests made after drawing the bath show supersaturation from 46 percent to 49 percent. These supersaturations are practically equivalent to any obtained at Saratoga and exceed any obtained anywhere in Europe.

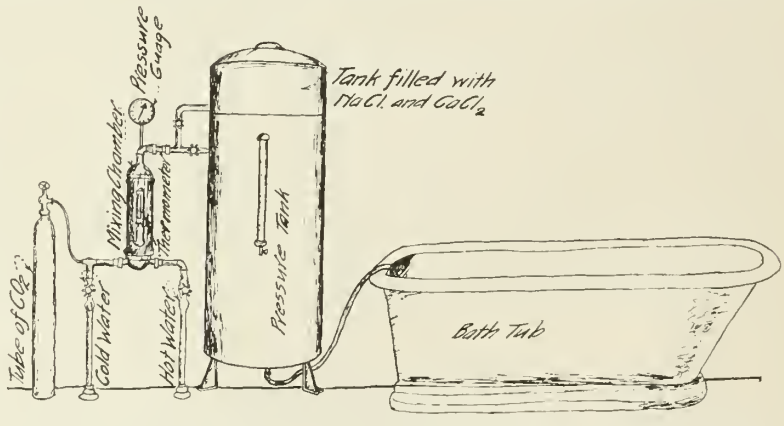


Fig. 2. Apparatus designed to administer artificial Nauheim baths, containing sodium chloride and calcium chloride. Gas and water are led through a mixing chamber into a pressure tank, where they are held for a few minutes until a supersaturation is secured. The mixture is then allowed to flow into the bath tub, and resembles very closely the Nauheim bath and is of equal strength.

It takes extensive means, time, and money to recover the precious treasure of health if it has once been lost, and it is a pity that so few find ideal nursing.—M. Rubner.

# SOME ADMINISTRATIVE PROBLEMS IN HOSPITAL BUYING

## Local Tradespeople Must Meet Competition Fairly or Be Ignored—Ulterior Motives Must Not Be Allowed to Interfere—Some Examples of Petty Grafting of Local Interests

By CORNELIUS S. LODER, Hospital Efficiency Specialist, of Cornelius S. Loder and Associates, New York.

A GENERAL hospital of about seventy-bed capacity, located in a manufacturing city of 21,000 population, in the middle west, experienced difficulty in meeting its annual deficit. A hospital specialist was retained, who showed them, on their budget of $36,000, that savings of about $8,000 could be effected, especially if more careful planning and forsight were exercised in the purchasing of food supplies. His recommendations included plans for increasing earnings, contributions and donations, but those matters are not for discussion in this article. The end sought was operating the entire institution on the most economical, effective basis through the use of all modern methods.

### A HEARTILY ENDORSED PLAN

The entire plan for betterment was heartily endorsed by the board of government, the superintendent and the housekeeper, and authority was granted the specialist to proceed forthwith installing his plans. An announcement was sent to all subscribers of the hospital, and a statement was prepared and handed to the editors of the three local papers. No hindrance nor any objection was anticipated. Those who had carried the burdens of the institution for many years renewed their interest and courage; in fact, the almost impossible task of paying bills had caused those in charge of the institution to consider seriously the discontinuance of the hospital or the abridgment of its charitable work in the community. The new method was successfully inaugurated, for all committees worked together in cheerful accord and earnestness. A ten-day test on the new system showed that the economies in food supplies alone would amount to nearly $5,000. The better spirit manifested throughout the hospital and in the town was commented upon favorably by many of the citizens.

### SELFISH INTERFERENCE

When the plan had been in operation about one month, the branch office of a large packing house located in an adjacent city telephoned the hospital superintendent that he, as branch manager, would have to decline accepting further orders. He refused to give any reasons, but admitted the account had been satisfactory both as to volume of business and as to payments.

A few days later the salesman of the wholesale grocery house, with whom the hospital had entered into satisfactory arrangements, called upon the superintendent and said that he had received instructions from the president of his company to refrain from further soliciting efforts with the institution and to decline taking further orders. The salesman said that everything had been satisfactory, that he did not know the reason for this order, and he especially regretted it as a personal loss in sales commissions.

Within one week, two other concerns had advised of their wish not to sell the hospital. But through a concern from whom the hospital had purchased goods under the new plan, the management learned that the local merchants, some of whom had previously sold the institution, had met and organized secretly, and then used questionable methods to counteract the loss of the hospital trade which they had considered their legitimate prey. It seems in the case of the local butchers that they had threatened to boycott the packing house if it continued selling this hospital. The packer had informed them that his company was selling hospitals, other institutions, and large private schools all through the country, and that the amount of the individual accounts equaled or exceeded those of the local butchers to whom they had sold on the same terms. He showed them the general custom of the trade in this respect and also that his company did not sell the consumer direct. But in preference to spending time on the case, the packer simply decided to "cut out" the hospital. Some time later this manager verified the above statement.

The retail grocers had approached the wholesale grocery concern on another plan. It seems they had made their purchases previously through different wholesale grocery concerns, but when this hospital situation came along they agreed to concentrate their trade on the wholesale grocery concern which was selling the hospital. The wholesale house was approached and assured that if they ceased filling the hospital needs they, the retail grocers, would buy exclusively through them, and guaranteed the sales reaching a minimum amount monthly, the arrangement to continue indefinitely, or so long as the hospital account was refused. Then these retail grocers waited on some of the wholesale in their line, in-

cluding those of whom they had formerly bought their supplies, but to whom no notice was given of a change in their trade. Their approach to these concerns was on the plan of obtaining written agreements not to sell the hospital. Thus, the retail grocers of the community expected to control the hospital situation.

### EFFICIENCY IMPAIRED

You may ask, what did the hospital people do? Answer—in accordance with their experience and largely in accord with other institutions under similar circumstances, they followed the line of least resistance. Of course they felt the situation very keenly, they were greatly disturbed and disappointed, for they had had time to contrast the old plan and the old spirit of interest and trouble with the new plan and its incentive for better and bigger work. But the members of the governing board were all voluntary workers, and although interested in the hospital, each was busy in his or her affairs, including their outside interests. The employed executive of the hospital could do nothing unless directed and backed by the advisory counsel, with the result that the entire institution slid back into its old and indifferent way of doing things. In other words, they "let go" on the business end, so that the lack of interest in those higher up was felt down the entire line.

The tradesmen had won their fight and they thought that they had done a very smart thing. But the winners removed the incentive for work from those in charge of the hospital and thus largely lessened the desire for accomplishment, betterment and advancement. The caliber and type of these men were far below what is usually found in a town, and this may have had considerable to do with the methods employed.

### A BATTLE WON, BUT LOST

The tradesmen won "hands down," and by only a little concerted effort on their part, but what did they win? The continuance and permanency of the hospital is not assured, and neither are these tradesmen sure of collecting their bills promptly or of being able to receive the patronage of the hospital permanently. The value of a sale is based on its profits, so it is a question if they have profited themselves especially when we must all take into account the value and advantage of a modern hospital in a community. It is a need equal to that of the public school, and real estate men include the hospital in their arguments to prospective buyers. However healthful a place, a hospital is needed. The best evidence of this is shown by their rapid growth in both number and size.

These tradesmen may have neglected to include in their calculations their own need or that of their employees for a hospital; they may have been helped themselves in the past; but greater than all of the above was their own obligation to the community in which they were located, their obligation to suffering mankind, and these factors cannot be equaled by mere temporary monetary considerations, so that these tradesmen won in dollars and lost in manhood. Thus, the loss is far greater than the gain.

I know that many hospitals have had interesting experiences with their retail trade and that they could furnish considerable information. I hope they will tell their story in some future issue of THE MODERN HOSPITAL.

Some other experiences occur to me through my hospital associations.

### MORE BLIND SELFISHNESS

The governing board of a hospital, on the plea of its superintendent, authorized the purchase of a large standing scale. Its position when delivered was to be near the entrance door for the food supplies, and the receiving clerk was to be instructed to weigh all articles that required such attention. A report was to be made whenever the amount differed from the bill either in excess or shortage. The hospital bought some of its supplies of the retail dealers, a few of whose wives were members of different hospital committees. The retail trade raised a cry about having their measurements questioned, and through their influence the institution was obliged to discontinue the use of the scales on local trade orders.

In another hospital the coal was purchased of local coal dealers, but when larger storage facilities were secured, an arrangement was made to purchase coal in carload lots at the wholesale price on the long ton basis. (Long ton 2,240 lbs., short ton 2,000 lbs., 12 per cent increase in quantity on the long ton.) A local truckman agreed to deliver the coal as soon as the car was reported, at 40c per load. His charge was to be based on the short ton price and figured in accordance with the amount charged by the wholesale dealer, that was in turn to conform with the quantity shown on the car. The local coal dealers discussed the matter among themselves over the telephone and then forced the truckman to refuse to handle any more of the coal on pain of losing his other business. They agreed to refuse to handle the coal unless purchased of one of their number. This resulted in the hospital being obliged to pay from 75 cents to $1.25 per ton more than it could secure the coal for under the car quantity plan.

Here is another example of loss to the hospital

on a little different line. The treasurer of the hospital had political ambitions and instructed the superintendent to purchase his supplies of the retail trade within the county, and he even went so far as to designate those to whom preference was to be given. This resulted in increasing the cost of such supplies from 25 per cent to 40 per cent and meant an additional operating cost to the hospital of many thousands of dollars during the year. On one item the cost advanced from 14 cents to 23 cents per pound. These transactions were used indirectly by this treasurer as an argument for support, and contributions to his cause, through the tradesmen, some of whom were active in the local counsels of the political party with which the treasurer was affiliated.

### THE DIRECT APPEAL AND THE RESPONSE

In great contrast to all of the above experiences, let me tell you of one within 100 miles of New York City. The efficiency engineer had evolved a method for the better operation of the hospital, and he was permitted by the governing board to call a meeting of the local tradespeople irrespective of their having sold the hospital or being in a business in which the hospital had needs. The announcement did not reveal anything as to the object of the meeting and no effort was made to work up sentiment or to secure interest. The only further step was to make follow-up calls on the telephone to insure the attendance of each one to whom an invitation had been sent. All came, but some out of curiosity. Then in behalf of the hospital the engineer presented the entire plan of working the hospital in tabloid form. His remarks were largely informative and in the nature of an appeal for more interest on a broader basis; then he referred to the hospital's obligations to the community, and asked for a spirit of good will and for hearty cooperation. He included statements showing that the manufacturers and wholesale trade were accustomed to sell directly to hospitals and that when they did not obtain the business, it was due to consideration for, or interest in, the local retail trade. His statements regarding cost of operating, between wholesale and retail prices, were startling, all of which were based on present day quotations in all lines of trade. He presented the quantity used in the hospital of each article illustrated, and invited those present to show an error either in individual items, or in the gross, which they were unable to do. His reference to local charities and those who contributed to them was then a thing that the retail trade had never considered seriously, but his strongest statements concerned the many persons of limited means who had been helped back to health and success through the hospital. In fact, his appeal for support was so well received that every person present joined with him heartily and enthusiastically in his wish to buy wherever the goods could be secured on the best terms, and finally some of the tradesmen present through a voluntary unsolicited appeal by one of their number, made contributions from the stock in their own stores to the hospital.

Now you ask what was the result of this splendid spirit? First, the local papers gave considerable publicity to the action of the local tradesmen, with the result that customers of these stores thanked their tradesmen warmly and sincerely. This engendered generally a better spirit of cooperation and understanding between those of different interests and later resulted in a series of "buy at home" days that actually increased the sales of the trade above anything that they could have secured in the way of net profits from the business of the local hospital. Then later, the local board of trade took up the interest of the local tradesmen by urging the local people to support more largely and generously their own local tradespeople. The tradesmen themselves went into the question of price and reduced it on articles that had been sold at a prohibitive figure, also established special bargain days, also "a dollar day plan" and, lastly, all united in issuing an illustrated booklet intended to counteract the mail-order proposition.

### THE SPECIALIST A HARMONIZER

This plan would seem to be feasible or adaptable everywhere, except possibly in a few of the larger cities, where purchasing conditions are not the same as concerning the retail trade. The plan, however, must be directed tactfully and skillfully, and best results will be obtained through the assistance of an outside man, who is competent to prepare and submit facts and figures in convincing manner.

Possibly every small community hospital has had, or is now having, experiences similar to the above. It would seem that the cause of humanity is best advanced through the hospital that is conducted on an economical and efficient basis and by interested and competent persons. Good results, however, cannot be secured if excessive cost is permitted in the purchasing of the supplies. The local trade may seem to think they have claims for local support from the hospital and insist on securing it, but they must know that the management is criticized if the operating cost is high, and that such people are not going to continue receiving criticism of the public when they know a better showing is possible.

It would seem as though the hospital should be allowed to conduct its affairs with "hands off" on the part of the retail trade and others who have special friends on any of the boards of the institution. There is a many-sided argument to this entire question. Each community institution must adjust itself to its own local conditions, but these views may give suggestion for improvement in the relations between the hospital workers, the operators, the contributing public, and the retail trade.

When purchases are made locally, the supplies are usually ordered daily, and the goods so ordered are delivered the same day. This is an advantage in keeping in closer touch with the supplies on hand, but requires also more constant time and attention. Buying at wholesale is usually done by the week or month for stated periods and it usually results in a more systematic method for checking supplies because of the larger quantity that is ordered at one time. Under either plan, the local trade usually secures the fill-in emergency orders.

The quantity of the supplies and their freshness, except in case of green vegetables, is not always the principal consideration, for it is regrettable that often price and quantity prevail as against quality.

## NEW ISOLATION UNIT, HURLEY HOSPITAL, FLINT, MICHIGAN

### Prevention of Cross Infections to Be Secured by Care in Technic Rather Than by Architectural Arrangement—Facilities for Maintaining Cleanliness the Chief Features —Some of the Details of Construction

By HERBERT E. DAVIS, Architect, of Davis, McGrath & Kiessling, New York City, and MISS ANNA M. SCHILL, Superintendent

THE ARCHITECTURE
BY MR. DAVIS

THE Isolation Building of the Hurley Hospital, plans of which are shown herewith, presents a solution of the problem for the care of contagious diseases that is especially adapted to cities of the smaller class.

The city of Flint has a population of about 50,000, and like many other cities of its size has up to the present time taken care of its contagious diseases in the much abhorred "pest house," located as far as possible from the center of population and avoided by all.

The rapid growth of Flint as an industrial center has made a more adequate and scientific care of this class of diseases an absolute necessity, and the present plans are the outcome of a thorough investigation of the problem.

The success which has attended the adoption of the theory of "contact infection," as applied at the Providence City Hospital since 1910, at the Contagious Hospital of the University of Michigan since 1913, and in certain hospitals of England, France and Germany for longer periods, together with its many economic advantages, led to its application for this building.

The theory to be applied is a very simple one, namely, that all infection is only the result of contact and is not transmissible through the air; hence infection can only be avoided by strict medical asepsis.

This means, first, that a single building located in the general hospital group with adequate light and ventilation will answer the purpose for all diseases. It is, therefore, possible to have it connected by tunnel with the light, heat, and water mains, laundry, kitchen, and food supplies of the main hospital, with the consequent great economic advantages in first cost, administration and maintenance.

It means, in the second place, however, that every possible convenience, such as washing facilities and sterilizers of various kinds, must be provided in the building to avoid "contact infection."

In general, the plan adopted is similar to that used in Ann Arbor, which consists of a one and a half story building with basement, the first story containing a central corridor with isolation rooms opening into it on either side, each room to accommodate two beds, the second story containing accommodations for the resident nurses and maid, and the basement containing sterilizer room, store room for clothing, and morgue.

Each isolation room is provided with a lavatory with knee-action valves and a water closet with a separate hot water supply through a gooseneck valve for rinsing purposes. This equipment will avoid the necessity for the patient leaving the room at any time and will save the nurses many steps by providing a convenient hopper within the room for the emptying of the bed-pan and other utensils.

The patient will be received from the outside directly into the room in which he will remain and will leave it only when dismissed to pass through the corridor to the exit infected dressing room, thence to the bath room and exit clean dressing room, shown at the front of the building.

Fig. 1. Hurley Hospital. Front view.

The entrance for doctors and nurses is at the opposite side of the building, where a space is provided for hanging the doctor's outer street clothes and for putting on a clean hospital robe if he intends to touch or handle a patient. The nurses on coming to the building may go directly up to their private quarters, or if coming on duty may cross the corridor to the infected dressing room, in which each is provided with two lockers, one for their infected robe and one for their clean one. Adjacent to the nurses' entrance to the central corridor is the nurses' station, at which the signal and annunciator are located.

Food will be delivered either by way of the tunnel to the dumbwaiter in the basement or from the outside by way of the veranda entrance to the kitchen.

Linen will be received from the laundry directly into the linen room, from the outside by way of the veranda. Soiled linen will be deposited through the infected linen chute into the infected sterilizer room below, from which it will pass through the linen sterilizer to the laundry by way of the tunnel.

The kitchen is equipped with a dish sterilizer in which all dishes used by a patient will be sterilized. It is also equipped with a steam table, plate warmer, refrigerator, etc.

The utility room is provided with a combination utensil bed-pan sterilizer, an instrument sterilizer and a bed-pan specimen closet with an outside vent.

Mattresses will be carried from the isolation rooms around the outside of the building to the basement entrance to the infected sterilizer room, and after passing through the sterilizer will be hung up ready for future use.

Patients' clothing will also be treated in this way and stored in bags hung from the ceiling in the store room for that purpose, and when required will be delivered at the patients' clean entrance dressing room from the outside.

The staircase provided from basement to the first story corridor is for emergency use only.

The plan is so arranged that any number of additional rooms may be added when needed without requiring additional service rooms.

The second story is arranged for the accommodation of four nurses and one housemaid, with a bath room, kitchen and a large room for the nurses' sitting and dining room.

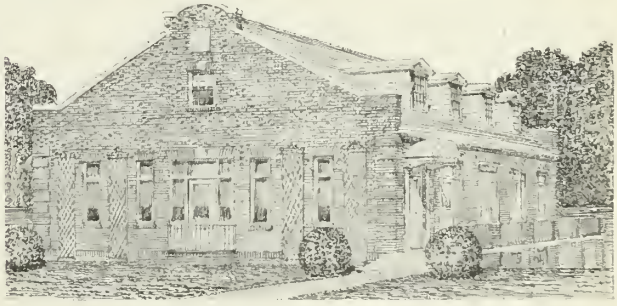

Fig. 2. Hurley Hospital. Isolation unit.

The exterior of the building is constructed of brick in general conformity with the other parts of the group. The roof is of slate and all sheet metal work of copper. The first floor is of fireproof construction, with a six-inch terrazzo sanitary base and floor finish throughout. All angles in plaster work on walls and ceilings are rounded, and the walls of bath room and kitchen tiled seven feet high with white glazed tile. All plaster walls, ceilings and woodwork throughout this floor are finished with enamel paint. Each isolation room has two radiators, so that one or both may be used as required. The radiators are hung on the walls

eight inches above the floor. Special concealed transom lifts are provided for all transoms, and the side sash in all isolation rooms are fitted with an approved type of ventilator. The water closets in each room are ventilated from ducts extending above the roof, fitted with special ventilator caps. All outside door and window openings are provided with screens and weather strips. Each floor

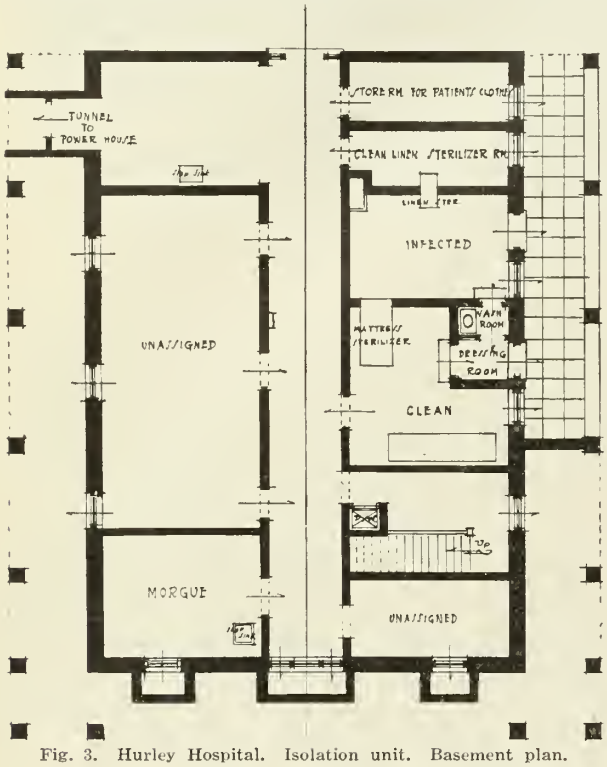


Fig. 3. Hurley Hospital. Isolation unit. Basement plan.

is equipped with a fire line with hose and reel for fire protection.

In developing the plans the architects are pleased to acknowledge their indebtedness to Miss Anna M. Schill, Superintendent of the Hurley Hospital; Dr. J. G. R. Manwaring, of Flint, and to Dr. S. S. Goldwater, of New York, for their co-operation and advice; also to the published reports of Dr. Dennett L. Richardson, of the Providence City Hospital, and of Dr. Reuben Peterson, medical director of the University of Michigan.

## THE TECHNIC OF OPERATION
### BY MISS SCHILL

In the new isolation building described by Mr. Herbert E. Davis it is proposed to adopt practically the same technic as that in use at the Providence City Hospital and at the new contagious hospital at the University of Michigan. Patients suffering from different contagious diseases will be admitted. The technic of this building is based upon the principles of aseptic nursing. The infection is confined to the rooms occupied by the patients, while the utility rooms and the central corridors are considered to be as free from contagion as are those of any hospital. The same nurses, observing aseptic precautions, care for all patients.

The success or failure of the hospital and its proposed plan of operation will depend largely upon how the nursing staff carries out the principles of medical asepsis. The nurses will be in charge of a graduate who has perfected herself in the technic of this special department. Before the hospital is opened, the nursing staff will be thoroughly drilled in the principles of medical asepsis. Just as in the surgical operating room, they will be taught that the conveyance of infectious material to those free from disease may and probably will result in infection. They will be told that if they contract a contagious disease while in the contagious disease service, it will be their own or their associates' fault. Just as it is impossible for a well trained nurse to brush back her hair in the operating room or touch articles not surgically clean, so it will become impossible for the nurse drilled in medical asepsis, who has

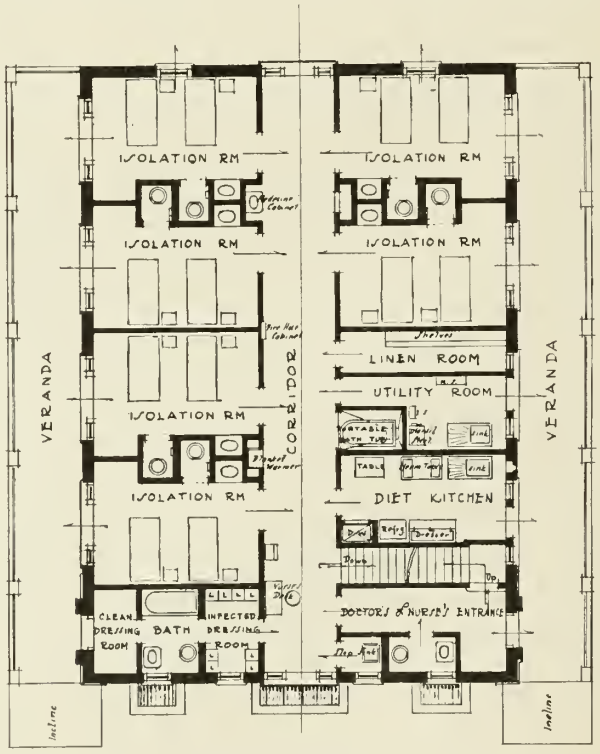


Fig. 4. Hurley Hospital. Isolation unit. First floor plan.

cared for a contagious disease, to touch anything until her hands have been thoroughly sterilized.

The nurse on entering a room to care for her patient will put on a gown, in order to avoid accidental contamination of her clothing. After attending to her patient, she will remove her gown and thoroughly sterilize her hands and arms in running water and liquid soap obtained from a retainer worked by a knee pressure, so that the infected hands do not need to touch the recepta-

cle. After immersing the hands and arms in some mild but effective antiseptic solution, the nurse can leave the room confident that she will not carry contagion to another patient. The main corridor is free from infection and kept so.

All dishes and other utensils used in the patients' rooms are immediately sterilized by steam. Patients' night clothing and bedding are placed in canvas receptacles and carried to the sterilizing and fumigating plant, where they are sterilized, receptacles and all.

Extra precautions will be required of the nurses before they leave the building to retire to their rooms. In order to avoid a great danger of infection, they will be prohibited from eating while on duty. They will be served in their own dining

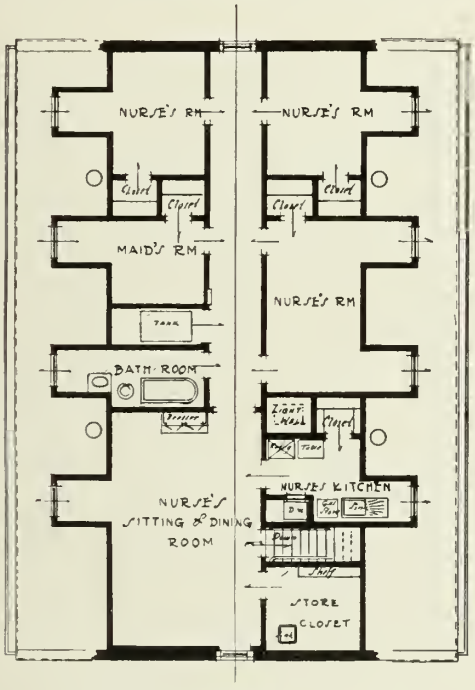


Fig. 5. Hurley Hospital. Isolation unit. Second floor plan.

room on their own dishes, which have been boiled, and with food that has not come in contact with any contagion.

Because of the possibility of a slip in the technic, and the acquiring of a contagious disease, illness of any kind among the nurses on duty will be carefully observed, and if necessary the nurse will be isolated for observation.

The contagious course will not be made compulsory for any pupil nurse, but it is hoped the pupil will feel that if she carefully carries out a certain technic there is very slight danger of contracting a contagious disease, and she will be loath to forego such valuable experience.

One of the most valuable features of the hospital is the porch, which can be made serviceable in many ways. Since each room opens upon the porch by a door through which a bed can be wheeled, each patient is assured at all times of abundant open-air treatment. Such a porch does away with the necessity of a patients' receiving and examining room, since each patient can be admitted directly to his room by way of this porch.

When a room is emptied it will not be disinfected by fumigation. No part of the isolation building at Providence or at the University of Michigan has ever been fumigated, and the good results speak for themselves. If there be nothing to the theory that infection is air-borne, then the air of the room in which the contagious patient has been is as free from organisms as is that of any other room. To make the room free from the possibility of infecting another patient who may occupy it, the bedding, the mattress, the bed, the walls as far as the patient can reach, in fact, everything which the patient could have touched, will be disinfected. It has been shown that this can be done very thoroughly by scrubbing with soap and water. The room will be well aired before it is occupied, just as we would thoroughly air a room recently occupied by a patient with a non-contagious disease.

The furniture of the rooms is to be of the simplest. It will consist of two iron beds, two bedside stands, two enameled chairs, shelf for towels and soap retainer worked by knee pressure, brackets for wash basins holding solution, two small shelves for toilet articles and wall hooks for nurses' gowns.

The general bath room was intentionally omitted, since the common use of such a room was impossible with men and women patients on the same floor. Even with two bath rooms, patients with different contagious diseases could hardly use the same toilets without great danger of infection. Each room is furnished with a toilet and lavatory, and when bedside bathing is necessary it will be done by means of a portable tub, which will be emptied and made aseptic after each use.

Whether or not we shall have cross-infection remains to be seen and can be better told after the plan has been in operation at least six months. This information we shall be very glad to give to readers of THE MODERN HOSPITAL and others interested in the care and treatment of contagious disease patients in a hospital.

I am pleased to acknowledge my indebtedness to Dr. Reuben Peterson, Medical Director University of Michigan Hospital, who has outlined and is carrying out the proposed plan of operation in the new contagious disease hospital in Ann Arbor.

The Charité Hospital in Berlin was founded in 1710 by Frederick I., and was greatly enlarged by Frederick the Great.

# MANAGEMENT OF THE FOOD SUPPLY OF THE HOSPITAL[1]

## Intimate Cooperation Between the Administration, the Staff, and the Nurse Is Necessary to Secure Good Food and to Serve It Attractively—Some Examples of Wasteful Methods

By ELLIOTT P. JOSLIN, M. D., Boston

THE food supply of a hospital constitutes such a large proportion, approximately one-fourth, of the total expenditure that the trustees of the hospital might well call this to the attention of the medical and nursing staffs in detail, and thus arouse their interest not only in the improvement in the distribution of the food, but in the prevention of its waste. I do not believe there is a single member of the staff who would challenge the statement that a considerable quantity of the patient's food at the hospital was wasted; even if only one or two cents a day per patient were saved, it would amount to a very considerable sum. The salary of a special dietitian devoting her entire time to the prevention of the waste of the food supply, from all its aspects, would many times be covered by the amount of capital saved.

### THE DIETITIAN

The dietitian in many of the hospitals visited in New York, Chicago, Rochester (Minn.), Ann Arbor, Pittsburg, Baltimore, and Boston played an unimportant rôle. It was very noticeable, however, that the more modern the hospital and the more up to date its management, the greater the power of the dietitian. In the poorer hospitals it seemed as if her entire time was taken up in supervising the preparation of desserts, and such desserts as were for private patients. To such lengths did this plan go in one hospital which I visited that on one day I found there were ninety-six different kinds of food prepared or served from the diet kitchen—for example, two kinds of broth, ten preparations of meat and fish, twenty-two vegetables, one gruel, twenty-one kinds or preparations of fruit, eighteen varieties of salad, and twelve varieties of desserts. Few hotels in the country could equal such a menu, and be it understood that these were prepared in addition to the routine diets of the private patients, nurses, staff, and the help. The work of the dietitian in this hospital had nothing to do with the routine diet of the nurses, staff, and servants, and yet their food unquestionably must have amounted to 90 percent of the total food served.

This is surely not what it should be. The dietitian of a hospital ought to be so much better trained in a knowledge of the food supply and its management than anyone else in the institution, that this individual should be the most important factor in the management of the food supply. The time of a trained dietitian should be spent on essentials and not on details. There is quite enough, however, to occupy the attention of a dietitian in the hospital without employing her services in the purchase of supplies.

### THE STAFF

The staff can be of great service in conserving the food supply of the hospital. The physicians and surgeons should feel that the responsibility for a fourth of the total expenditure of the hospital rests on them; they should be encouraged to point out waste and report extravagance and carelessness. I feel strongly that if this aspect of the situation had been called to my attention while I was a member of the staff of a certain large hospital, I could have saved that hospital a considerable sum. Frankly, I believe most of the members of the staff, like myself, either thought little about the waste or felt that, if they did speak of it, criticisms and suggestions would not be welcome. This is a very wrong point of view. The services of the staff should be at the disposal of the hospital not only for the care of the patients, but for the efficient management of the institution. By this means a noticeable reduction in the expenses could surely be made, and I am confident that the trustees would only too gladly recognize such help on the part of the staff by utilizing a portion of the funds thus saved for a larger laboratory appropriation and for progressive, scientific work.

### THE NURSES

The nurses have more power to prevent waste of food in hospitals than the administration or medical staff. So much depends on them that they should be given systematic instruction during their first month of training on this very point. This instruction should not only be didactic, but practical as well. A specially trained nurse should be employed for this purpose, and she should have had opportunities to study methods employed in other institutions for the instruction of nurses in this regard. It is almost as valuable to see the mistakes which are made in other institutions as to see the points in which they excel.

[1]This paper is a report recently submitted to a committee of the trustees and staff of a hospital appointed to consider plans for retrenchment and for future development.

### INSPECTION OF GARBAGE

The inspection of the garbage is undoubtedly one of the best methods to employ in the prevention of waste. This should be so detailed that the head nurse of each ward in the hospital should feel its effect. At the weekly meeting of the head nurses with their superintendent in one of the best conducted hospitals which I visited, the inspection of garbage was reported, and this head nurse held up to commendation, and that head nurse exposed to reproof because of the inspector's report. The assistant administrative superintendent of the institution told me that this proceeding was of great help in preventing waste. Opinions differed somewhat as to the best sort of garbage inspection, whether by examination of the residue of each ward, spread out on a garbage table, its estimation by weight, or a combination of both methods. Garbage inspection actually requires little time. I was present at the garbage inspection of a hospital which fed an aggregate of approximately one thousand patients, nurses, and staff, and the time occupied was less than one-half hour. The garbage was all brought to a room in the basement, two men emptied the can from each ward to a sorting table and then pushed it into a reception can at the lower end of the table, and this was carried off by a third man. It was perfectly obvious that some wards were far more wasteful than others. Not only this, but it was also obvious where the waste occurred. It was evident that much more bread was lost in some wards than in others simply because it had been poorly toasted. On that particular morning it was plain also that one-third of the meat served to the help in the form of sausages was wasted. The cause was not so clear, but apparently either the sausages were disliked by the help, and consequently a different kind of food might have been more economically served them, or the variety of sausages was too large, and more were taken by the individual than he needed. At any rate, the waste of that particular food above all else was seen, and a definite problem was thus presented for solution.

### SIMPLIFICATION OF DIETS

The simplification of the diet system of a hospital not only favors economy in the purchase of food, but efficiency in service. In one large hospital devoted chiefly to surgical cases there were but three standard diets. These were represented by three colors over the patient's bed. It was a very easy matter in this hospital to order a diet for a patient and to serve it.

### CLASSIFICATION OF PATIENTS

The superintendent's office can contribute greatly to this end by a suitable grouping of cases. To some extent this is already done, for medical and surgical cases are already separated. The surgical patients require more food, but this may be of a cheaper variety, and the surgical diets are proverbially simple.

Another broad classification is the division of patients into bed cases, who are served individually, and convalescents, who are allowed to eat at a common table either in the ward or in an adjoining small dining room. This plan is adopted in many of the larger institutions. One recently built hospital had arranged for dining rooms off the wards for this special purpose. Nowhere did I learn of disadvantages in this plan. By it not only is the time of one or two nurses for a ward saved, but the food is warmer when it reaches the patient. It was suggested to me by one dietitian that, even though this plan was adopted, the patients should be served individually, quite as is the rule in the management of the help, rather than have the food placed upon the table, with free access to all. The above plan presents an incidental advantage in that it visibly demonstrates to the medical staff the number of convalescent patients. Undoubtedly one of the simplest measures in reducing the food supply of a hospital is the prompt discharge of the patients. No physician who has seen many years of service in a large institution but would acknowledge that a day seldom goes by that one or two patients on each service could have been discharged without detriment to themselves if more thought had been given the matter. Even if the beds were refilled at once, they would be more suitably filled.

The classification of patients might be extended with advantage by the division according to the disease. I will mention only two instances—typhoid and diabetes. In one of the best hospitals visited all the female typhoid fever patients were gathered in one of the two female wards and all the male typhoids in one of the two male wards. Not only is the diet problem simplified, but the possibility of contagion is lessened. It is an easy matter to have a rotation of services on these wards from year to year, and thus avoid any criticism of this plan which might be raised by individual members of the staff. Similarly in diabetes, if all the patients, both medical and surgical, were always sent to the same wards, where the same head nurses could have supervision of the diets, the recovery of these patients would be promoted and their care immensely simplified. Such patients usually remain a long time in the hospital, and it is not too much to say that one-fourth to one-third of their stay would be saved the institution if they were thus grouped.

Here, again, rotation in the care of these patients by the staff could be easily arranged.

### SCIENTIFIC DIETETIC STUDIES

Special investigations of the diet and of the treatment of various diseases are naturally to be encouraged by the trustees and staff of a hospital. Indeed, if anyone shows the slightest interest toward progressive work, everything should be done to encourage that person. I was impressed with the facilities which were afforded for such studies in one city. At the period of my visit all suitable patients with nephritis were grouped together for this purpose. By this means the investigation was promoted and the labor simplified, and all this was done without any increase, and very likely a decrease, of expense to the hospital. This investigation would have been impracticable had the patients been individually studied while scattered about in various wards.

### SPECIAL DIETS

The special diets of a hospital should be as few as possible. While a systematic investigation of special diets may be promoted, the use of special diets at random should be condemned. Already reference has been made to the extravagant number of special dishes prepared at the instigation of the staff in one large institution. It is well known that nurses often order many kinds of desserts for private patients, knowing that all will not be touched, simply to tempt the patient. This is an unjustifiable waste. In one institution I observed that, in addition to the routine test breakfast employed the world over for the study of diseases of the stomach, a different extra special meal was employed on each of the three medical services, and yet all three test meals were essentially the same. I personally knew the chief of staff of each service, and am convinced that, if the matter had been called to their attention, one standard meal would have been adopted. Systems of diet change from year to year; consequently a committee of the staff should be annually appointed to coordinate the various diets. These diets should be printed and distributed to each member of the staff instead of having typewritten copies given to the nurses alone. It should be expected that the staff would seldom deviate from these standards.

### METHOD OF SERVING FOOD

The method in which food is served prevents or favors waste. For example, the placing of buttered toast on each tray is a most wasteful method, whereas the passing around of bread or toast and butter to each one in the ward saves much. Of course many trays are absolutely untouched, and yet all that is on them must of necessity be thrown away. Careful serving would obviate this great loss. Economy and efficiency are prompted in some hospitals by having the trays set and served with the cold foods in the diet kitchen, and then placed on carts and drawn into the ward for distribution to the patients. On a smaller cart the hot foods are carried in containers set in hot water, and served hot at each bedside. This method appears to be of much service in the wards of one excellent hospital in New York, and would warrant investigation. I was told that it reduced the labor one-half, and was more satisfactory from the patients' point of view. A detailed supervision of the food served each patient in the ward was thus rendered easy.

### SMALL PORTIONS

The serving of small portions is another method adopted in many hospitals to prevent waste; thus, instead of giving each patient two slices of bread, one slice in the morning and at night and only half a slice at noon are given, but during the meal bread is freely passed about in the ward and all urged to take it who can eat it. Butter is also served with great care, although the patients are always told that they can have more if they wish. I heard it said that if the per capita amount of butter in an institution was above one and one-half ounces, it was a sign of gross mismanagement. Indeed, it appeared that there are well-known standards of amounts of food per individual per day for institutions, and it should be very easy for a board of trustees to determine whether their expenditures for standard foods—such as meat, bread, and butter—are above or below the general average.

### CULTIVATION OF PATIENTS' TASTES

The taste of the patients was a special point made at one hospital. It was found at this hospital that waste occurred to a great extent not because the food was poor, but because the patients did not care to eat it. In the Mount Sinai Hospital in New York no essential change in the character of the food is made on account of the Jewish patients. I was told that, even if the ritual was followed in the selection of the food, the patients would not believe this to be the case, and so would not be any more satisfied. Little points, however, should be observed, such as the avoidance of gravy on the meat, for this is distasteful to the patients. On the other hand, in an Italian hospital the substitution of Italian cooks solved many dietetic difficulties.

### INDIVIDUAL PORTIONS FOR THE HELP

The serving of individual portions of food to the

help was emphasized in many hospitals. If this is not done, large quantities of food are taken from the platter and yet not eaten.

### NUTRITIVE VALUE OF THE DIET

The caloric value of the diet should be considered. The same amount of nourishment can often be furnished the patients more cheaply than in the form prescribed. Milk is a great offender in this respect. It is expensive, yet the custom has grown up to furnish it in large quantities to hospital patients. This is not always advisable. In the first place, there is no necessity for it; in the second place, it is a food to which many patients are not accustomed; third, it is responsible in a large degree for the proverbial constipation of the average hospital patient. Some patients obviously take milk more easily than others, but I judge that much harm is often done in the hospital by urging it on patients. Meat soups are expensive; vegetable and cereal soups can be had which contain an equal amount, or even twice as much, nourishment as meat soups, and at far less cost. In one hospital $1,000 a year was saved by furnishing the patients coffee once a day and tea twice instead of the reverse.

The quantity and quality of the food at your hospital, so far as I am aware, has usually been most satisfactory. Whether special study has been made of the quality of food recently, I do not know. In one of the larger hospitals in New York it was found not long ago that adulteration of the food existed, and that this was easily to be ascertained and as easily corrected.

This report would be incomplete without calling attention to the necessity of the supervision of the purchase of food. Data should be furnished the superintendent showing the relative cost of different foods at the hospital compared to that at other Boston hospitals. It is also possible that co-operation could be established between the different hospitals in Boston in the purchase of food whereby considerable sums might be saved. I believe some such plan has been adopted in New York. Certainly the prices paid for the standard foods per individual per day in the different institutions of the city should be published.

The question of diet at the hospital admits of much further study. This might well be undertaken by a committee whose membership should represent the administration, the medical, surgical, and nursing staffs.

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The small hospital has a great task to perform. It has to take care of the sick among the country population. To accomplish this, the country and small towns must be provided with a net of small hospitals.—Helwes.

## NEW HOSPITAL AT GULFPORT, MISS.

### King's Daughters to Have Modernly Appointed Building

A new home in course of construction for the King's Daughters' Hospital at Gulfport, Miss., is to be a two-story H-shaped structure of brick and reinforced concrete, with fire-resisting partitions, floors, and ceilings. All rooms will be outside rooms.

The building will be heated by the hot water unit system of radiation, lighted throughout with electricity and gas, and a vacuum cleaning system to control the entire building will be installed.

The basement in the right wing will contain the laundry, store rooms, heater, and machinery rooms.

The first floor will contain eighteen private wards, with corresponding private and public bath rooms, superintendent's office, general reception room, broad front porch, screened, doctors' room and library, store rooms, with necessary longitudinal and transverse corridors with broad staircases, electric elevator with connection to all floors and to roof solarium, food elevator to connect with kitchen and to all floors specially ventilated. The rear section of the right wing of the building will contain the kitchens, the dining rooms, the pantry, service rooms, refrigerator and five nurses' living or bed rooms, with bath. The arrangement of the kitchens is such that this department is cut off from the rest of the building by a heavy partition, thus eliminating any possibility of the odors incident to the preparation of foods circulating to the other parts of the building.

The second floor will contain ten private wards, duty rooms for nurses, screened porch, one public ward for males and one for females, superintendent's room, resident surgeon's room, linen rooms, store rooms, maternity wards, x-ray laboratory, male and female surgery rooms, drug, anesthesia, instrument sterilizing, surgeons' and two operating rooms, and necessary baths.

The arrangement of duty rooms for nurses is such as to provide efficient service to all private and public wards.

Elevator and staircases are prominently placed so as to give ready access to all parts of the building.

The building will be terraced and will face the south, toward the gulf, affording the maximum amount of light and air to all of its parts, and the balconies will be screened and so placed as not to shade any other floor, and give outdoor space for all patients.

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### Rules for Tonsil and Adenoid Work

The public health committee of the New York Academy of Medicine has recommended that all operations for adenoids and tonsils be done under general anesthesia, and that hospitals where these operations are done should be prepared to keep patients from eighteen to twenty-four hours following operation.

For several years past the Department of Health of New York, owing to want of proper facilities in the hospitals of the city, has been maintaining a number of out-clinics, and in these nearly one-third of all the tonsil and adenoid work on school children has been done. Now the Board of Estimate and Apportionment has decided that every hospital should be equipped to do this kind of work, and this year the budgets contained an appropriation for the purpose.

The Associated Out-Patient Clinics have been studying this matter, and, in co-operation with the Academy, the above general rules were promulgated.

# NUTS AND NUT PREPARATIONS IN THE DIETARY[1]

## Among the Most Valuable of Human Foods, and Not Sufficiently Appreciated—Too Rich for Some Stomachs—A Few of the Preparations, With Comment

By JOHN PHILLIPS STREET, Chemist, Connecticut Agricultural Experiment Station, New Haven, Conn.

### NUTS

TOO often the food value of nuts is not appreciated, although they are among the most nutritious of all our foods, especially in the dried condition. While many of the nuts contain considerable protein, their high content of fat is, as a rule, their chief characteristic. This property has been taken advantage of in the efforts to produce butter substitutes or "vegetable butter," and from time to time there have appeared in the markets such products as Albene, Nucoline, Vegsu, Nuttolene, Cocos Butter, etc. Few of these preparations, however, have gained wide popularity.

By many, unfortunately, nuts are not readily digested in the stomach. This is due in part to their richness in fat and in part to their relatively high content of fibrous matter (cellulose). The objection to the cellulose may be overcome in great measure by thorough mastication. The manufacturer, however, has come to the rescue of the lazy and careless consumer by the preparation of such products as peanut butter, almond paste, etc., in making which the nuts are very finely ground.

The objection to the large quantities of fats or oils present may be overcome to some extent by a partial removal of the excess of oil, just as cocoa is prepared from chocolate, or, what is still better, by combining the nuts with other foods of a less oily nature. Making a meal of a quart of peanuts at the circus or at a foot ball game is hardly a rational practice, and it is not surprising that, eaten under such conditions, nuts should gain an unenviable reputation for indigestibility. If a suitable number of cakes or crackers, or some popcorn, or other carbohydrate food, were eaten together with these same abused peanuts, a better balanced ration would be secured with the chance of disturbing less the processes of digestion.

In order to meet the prejudices of vegetarians, certain manufacturers have produced from nuts meat substitutes, in which they succeed in developing a flavor remarkably akin to that of meat. Fromm's Extract is such a product, and according to Hutchinson contains:

| | |
|---|---|
| Water | 25.3 |
| Protein | 21.9 |
| Fat | 31.6 |
| Carbohydrates | 8.3 |
| Ash | 12.8 |

[1]This is one of a series of papers on Foods. Next month will appear a paper on "Infant Foods," embodying the results of a long series of laboratory investigations which Mr. Street has just completed.

Kellogg's Nuttose and Protose are likewise meat substitutes and will be discussed later.

Comparatively few experiments have been made on the absorbability of nuts, but in one instance, in which the subject lived exclusively on fruits and nuts, 82.5 percent of the protein, 86.9 percent of the fat, and 96 percent of the carbohydrates were absorbed, comparing by no means unfavorably with the absorption of the ordinary mixed diet.

### COMPOSITION OF NUTS

Table 1 gives average analyses of the better known nuts. A glance at this table shows the high nutritive value of nuts, and that, with a few exceptions, from 50 to 70 percent of their total substance consists of fatty matters.

Table 1. Composition of Nuts[1] (Edible portion only)

| Kind | Water | Ash | Protein (N × 6.25) | Fiber | Nitrogen-free extract | Ether extract (fat) | Calories per 100 gms. |
|---|---|---|---|---|---|---|---|
| Almonds | 4.8 | 2.0 | 21.0 | 2.0 | 15.3 | 54.9 | 647 |
| Beechnuts | 4.0 | 3.5 | 21.9 | 13.2 | | 57.4 | 657 |
| Biotes (acorns) | 4.1 | 2.4 | 8.1 | 48.0 | | 37.4 | 561 |
| Brazil nuts | 5.3 | 3.9 | 17.0 | 7.0 | | 66.8 | 697 |
| Butternuts | 4.4 | 2.9 | 27.9 | 3.5 | | 61.2 | 676 |
| Chestnuts, fresh | 45.0 | 1.3 | 6.2 | 1.8 | 40.3 | 5.4 | 242 |
| Chestnuts, dried | 5.9 | 2.2 | 10.7 | 2.7 | 71.5 | 7.0 | 403 |
| Cocoanuts, with milk | 14.1 | 1.7 | 5.7 | 27.9 | | 50.6 | 590 |
| Cocoanuts, without milk[2] | 8.9 | 1.0 | 3.6 | 17.5 | | 31.7 | 370 |
| Cocoanut milk | 92.7 | 0.8 | 0.4 | 4.6 | | 1.5 | 34 |
| Filberts | 3.7 | 2.4 | 15.6 | 13.0 | | 65.3 | 702 |
| Hickorynuts | 3.7 | 2.1 | 15.4 | 11.4 | | 67.4 | 714 |
| Lichi nuts | 17.9 | 1.5 | 2.9 | 77.5 | | 0.2 | 323 |
| Peanuts | 9.2 | 2.0 | 25.8 | 2.5 | 21.9 | 38.6 | 548 |
| Pecans | 2.7 | 1.9 | 9.6 | 15.3 | | 70.5 | 734 |
| Pinenuts (pignolias) | 6.4 | 3.4 | 33.9 | 6.9 | | 49.4 | 608 |
| Pistachios | 4.2 | 3.1 | 22.6 | 15.6 | | 54.5 | 633 |
| Walnuts, black | 2.5 | 1.9 | 27.6 | 1.7 | 10.0 | 56.3 | 664 |
| Walnuts, soft-shell | 2.5 | 1.4 | 16.6 | 2.6 | 13.5 | 63.4 | 701 |

[1]Atwater & Bryant, United States Department Agriculture, Official Experiment Station, Bulletin 28 (revised).
[2]37.3 refuse.

Chestnuts are an exception in this respect, and are much more of a carbohydrate food than any other of our common nuts. This freedom from the usual excess of fat should make chestnuts of great general value as an article of diet. It has been claimed that a given area of ground when planted with chestnut trees produces the maximum amount of human food.

Lichi, or Chinese, nuts, are almost totally deficient in fat; in fact, they are not true nuts in the ordinary sense of the term.

As will be seen by the table, the nuts, excepting chestnuts and lichi nuts, are relatively low in car-

bohydrates, and, with these exceptions, the carbohydrates present contain but little starch. This fact is taken advantage of in the preparation of diabetic dietaries, for which almond, peanut, and walnut preparations are extremely well suited.

The last column in the table shows the high fuel value of nuts. When it is remembered that 100 grams of rib roast beef yield but 291 calories and the same amounts of full cream cheese and wheat bread yield but 417 and 261 calories respectively, such fuel values as 647 per 100 grams for almonds, 403 for dried chestnuts, 548 for peanuts, 734 for pecans, and 664 for walnuts clearly show the great nutriment value of nuts. An exclusive nut diet is not to be recommended for obvious reasons, but in the writer's judgment nuts should enter more widely into the ordinary daily dietary, either in the natural condition, or as nut pastes and butters, or in the form of breads, cakes, and biscuits.

Nuts are seldom adulterated, and insect injury is easily apparent even to the careless purchaser. Pecans are at times treated with an ochreous material to improve the color of the shells and thus to suggest superior quality, but, aside from this, the writer is unaware of any serious form of nut adulteration. Shriveled and even wormy nuts are, of course, offered for sale, but so are rancid butter and watered milk.

### NUT PREPARATIONS

Table 2 gives the analyses of a number of special nut preparations, nearly all of which were examined in the writer's laboratory. The almond pastes are simply ground almonds, partially defatted. Kellogg's Almond Butter, on the other hand, represents a paste made from the entire nuts. It is recommended as "a perfect substitute for cow's milk," which, of course, it is not, as in cow's milk the protein and fat are present in nearly equal amounts and the carbohydrates in considerable excess, conditions which are not even approximated in this product. Health Food Company's Almond Meal and Van Abbott's Almond Flour differ in that in the former over one-half of the oil has been removed, while the Van Abbott preparation is very similar to Kellogg's, already discussed. The remaining almond preparations in the table are offered primarily as diabetic foods. With the exception of the Loeb and Sanity brands, the amounts of carbohydrates present are much too high for strict diabetic dietaries. For normal people, however, all of these almond preparations are desirable and highly nutritious foods.

The different brands of peanut butter show only trifling variations in composition. They consist essentially of very finely ground peanuts, to which sufficient salt for seasoning has been added. A chemical analysis, of course, does not indicate delicacy of flavor, and no doubt these brands vary in this respect, but these variations in quality, marked though they may be, hardly justify such a range of cost per pound as from 16 to 74 cents.

Table 2. Nut Preparations

| Brand | Water | Ash | Protein (N × 6.25) | Fiber | Nitrogen-free extract | Ether extract (fat) | Calories per 100 gms. |
|---|---|---|---|---|---|---|---|
| **Almond Preparations** | | | | | | | |
| Chapman's Almond Paste | 23.7 | 1.4 | 13.1 | 36.3 | | 25.5 | 427 |
| Heide's Almond Paste | 22.0 | 1.6 | 12.7 | 43.7 | | 20.0 | 406 |
| Spencer's Almond Paste | 27.0 | 1.7 | 13.5 | 31.6 | | 26.2 | 416 |
| Kellogg's Almond Butter | 0.9 | 2.9 | 22.6 | 3.9 | 8.2 | 61.5 | 677 |
| Health Food Co.'s Almond Meal | 7.2 | 5.5 | 49.1 | 0.5 | 15.9 | 21.8 | 457 |
| Van Abbott's Almond Flour | 4.0 | 3.0 | 24.6 | 1.9 | 7.9 | 58.6 | 657 |
| Callard, Stewart & Watt's Almond Biscuit | 3.7 | 3.2 | 28.3 | 36.8 | | 28.0 | 512 |
| Callard, Stewart & Watt's Almond Shortbreads | 4.2 | 3.5 | 19.5 | 20.7 | | 52.1 | 630 |
| Charrasse Gluten—Almond Biscuits | 5.3 | 1.6 | 18.1 | 0.6 | 50.6 | 23.8 | 489 |
| Johnson's Almond Biscuits | 5.3 | 2.1 | 29.0 | 0.5 | 54.3 | 8.8 | 412 |
| Health Food Co.'s Saliva Almond Sticks | 2.6 | 3.4 | 22.3 | 0.7 | 41.1 | 29.9 | 523 |
| Loeb's Diabetic Almond Macaroons | 3.2 | 3.0 | 46.5 | 1.5 | 8.0 | 37.8 | 558 |
| "Sanity" Almond Cakes for Diabetics | 4.3 | 2.9 | 32.5 | 0.9 | 10.8 | 48.6 | 611 |
| **Peanut Preparations** | | | | | | | |
| Beardsley's Acme Peanut Butter | 2.2 | 4.4 | 28.2 | 1.7 | 15.2 | 48.3 | 608 |
| Beechnut Peanut Butter | 2.0 | 3.5 | 29.4 | 1.9 | 16.6 | 46.6 | 603 |
| Brooke's Peanut Butter | 1.8 | 3.8 | 29.5 | 1.5 | 14.9 | 48.5 | 614 |
| Heinz's Peanut Butter | 3.0 | 3.9 | 28.9 | 1.7 | 15.2 | 47.3 | 592 |
| Kellogg's Peanut Butter | 3.3 | 3.1 | 29.4 | 1.4 | 13.5 | 49.3 | 615 |
| Leggett's Premier Peanut Butter | 2.1 | 4.0 | 29.7 | 1.7 | 18.8 | 43.7 | 587 |
| MacLaren's Eagle Peanut Butter | 1.5 | 3.8 | 32.1 | 1.7 | 16.0 | 44.9 | 597 |
| Nut Products Co.'s Penolia | 2.4 | 3.9 | 27.9 | 1.5 | 13.0 | 51.3 | 625 |
| Pierce's Acharis Peanut Butter | 1.7 | 3.7 | 28.7 | 3.0 | 14.6 | 48.3 | 608 |
| Peanut Butter (average 14 analyses) | 2.3 | 4.0 | 29.3 | 1.8 | 15.4 | 47.2 | 604 |
| Rademann's Peanut Bread | 24.6 | 3.8 | 33.6 | 5.5 | 19.7 | 12.8 | 328 |
| Frank's Peanut Cakes | 6.4 | 2.7 | 32.2 | 3.1 | 36.5 | 19.1 | 447 |
| Rademann's Peanut Biscuits | 1.9 | 2.7 | 34.8 | ... | 39.1 | 21.5 | 489 |
| Kellogg's Nut (Peanut) Meal | 3.0 | 2.2 | 29.0 | 2.0 | 12.1 | 51.7 | 630 |
| **Pinenuts** | | | | | | | |
| Dieto Food Company | 2.2 | 4.6 | 39.7 | 0.8 | 2.7 | 50.0 | 620 |
| Jireh Food Company | 2.0 | 4.6 | 39.7 | 0.9 | 3.4 | 49.4 | 617 |
| Kellogg Food Company | 2.6 | 4.5 | 38.0 | 1.1 | 4.2 | 49.6 | 615 |
| **Malted Nuts** | | | | | | | |
| Kellogg's Malted Nuts | 2.6 | 2.2 | 23.7 | 43.9 | | 27.6 | 519 |
| Nashville San.-Food Co.'s Malted Nut Food | 3.4 | 1.7 | 24.7 | 27.5 | | 42.7 | 593 |
| **Miscellaneous Nut Preparations** | | | | | | | |
| Fromm's Hazelnut Sticks | 5.2 | 2.9 | 13.4 | 1.7 | 60.8 | 16.0 | 441 |
| Van Abbott's Walnut Biscuits | 4.4 | 2.9 | 20.9 | 2.3 | 12.3 | 57.2 | 648 |
| Kellogg's Lacnut | 3.8 | 2.0 | 22.2 | 1.2 | 39.5 | 31.3 | 529 |
| Kellogg's Nut Bromose | 14.0 | 1.5 | 17.1 | 1.2 | 39.4 | 26.8 | 467 |
| Kellogg's Nut Butter | 0.2 | 2.9 | 28.8 | 3.7 | 13.9 | 50.5 | 625 |
| Kellogg's Nuttolene | 55.2 | 2.2 | 12.7 | 1.8 | 6.3 | 21.8 | 272 |
| Kellogg's Nuttose | 57.3 | 2.3 | 16.9 | 0.9 | 0.6 | 22.0 | 268 |
| Kellogg's Protose Vegetable Meat | 60.6 | 1.8 | 21.9 | 0.4 | 8.2 | 7.1 | 184 |
| Kellogg's Protose Vegetable Meat, potted | 56.6 | 2.7 | 18.1 | 0.6 | 8.7 | 13.3 | 227 |
| Kellogg's Protose Vegetable Meat, roast | 57.5 | 2.2 | 23.9 | 0.5 | 7.9 | 8.0 | 199 |
| Nashville San.-Food Co.'s Nut Butter | 1.9 | 2.9 | 28.0 | 1.6 | 13.0 | 52.6 | 637 |
| Nashville San.-Food Co.'s Nutcysa | 57.0 | 1.8 | 12.9 | 1.0 | 6.3 | 21.0 | 266 |
| Nashville San.-Food Co.'s Nutfoda | 62.3 | 1.6 | 20.8 | 0.5 | 6.8 | 8.0 | 182 |
| **Some Staple Foods** | | | | | | | |
| Rib roast beef | 57.0 | 0.9 | 17.5 | ... | .... | 24.6 | 291 |
| Butter | 11.0 | 3.0 | 1.0 | ... | .... | 85.0 | 769 |
| Cheese, full cream | 34.2 | 3.8 | 25.9 | ... | 2.4 | 33.7 | 417 |
| Milk | 87.0 | 0.7 | 3.3 | ... | 5.0 | 4.0 | 69 |
| Wheat bread | 35.3 | 1.1 | 9.2 | 0.5 | 52.6 | 1.3 | 261 |

the prices asked for the fourteen samples analyzed by the writer. The lowest priced sample of these peanut butters in one pound yielded over 2,700 calories for 16 cents. Peanut butter carries somewhat less than 5 percent of starch, and, in spite of the 15 percent of carbohydrates present, is by no means to be despised in dietaries where an excess of carbohydrates is inhibited.

The three analyses of pine nuts are very much alike. This nut affords a highly nutritious food; it contains no starch and only a few percent of total carbohydrates. It is a most suitable food for carbohydrate-poor dietaries.

The malted nuts require no special comment, the Nashville sample containing considerably more fat, not necessarily an advantage.

Among the miscellaneous samples Fromm's Hazelnut Sticks and Van Abbott's Walnut Biscuits are sold as special diabetic foods; the former is as entirely unsuitable for this purpose as the latter is acceptable.

Kellogg's Lacnut is a preparation of almonds and other nuts especially intended for infant feeding. It is claimed that its composition "is nearly identical with that of mother's milk," and it is true that the relative amounts of protein, fat, and carbohydrates present are not widely dissimilar to those found in human milk.

Kellogg's Nut Bromose is a confection rather than a food, and is made from nuts and "meltose," the Kellogg name for the well-known sugar, maltose.

Kellogg's Nut Butter resembles peanut butter in composition, but is made from a combination of nuts.

Kellogg's Nuttolene, Nuttose, and the various Protose preparations are offered as substitutes for meat. Nuttolene is of the consistency of cream cheese, with a flavor similar to that of meat. Nuttose is a nut product, nearly carbohydrate-free, and with a decided meaty flavor. Protose is sold as a "vegetable meat," looks like meat, tastes like meat, smells like meat, has the composition of meat, and even the fiber of meat. It contains less than half as much fat as Nuttose, with considerably more protein and carbohydrates. Protose Roast is ordinary Protose roasted with a special brown sauce, while Protose Potted is a mixture of Protose and Nuttolene roasted together and then reduced to a pulp.

The three Nashville Sanitarium products require no special comment. The Nut Butter, Nutcysa, and Nutfoda resemble very closely in composition Kellogg's Nut Butter, Nuttolene, and Protose, respectively.

At the end of the table are given analyses of roast beef, butter, cream cheese, milk, and wheat bread for the purpose of comparison with the products under discussion. That the nut preparations are of great nutriment value is not open to argument; whether they are too concentrated and rich for common consumption, each person will have to decide for himself.

## AFTER THE NEW YORK HOSPITALS

### Superintendents to Be Prosecuted for Failure to Notify Health Department of Contagious Diseases

The commissioner of health of New York city recently sent the following letter to each of the hospitals of the city, notifying superintendents that in the future they will be held strictly accountable for failure to promptly report the various notifiable diseases as required by section 86 of the sanitary code:

"Dear Sir: The delay in reporting communicable diseases, particularly typhoid fever, by the superintendents of hospitals, as required by section 86 of the sanitary code, has prevented the department from obtaining such information as would make the prompt suppression of epidemics possible. The control of the sources of infection by the department must wait on the initial notification of cases of the disease, and our entire procedure in regard to typhoid fever depends for its success on prompt and conscientious compliance with this section of the code. Failure to observe this regulation has resulted within the last year in so much avoidable sickness that the department feels justified in proceeding through the courts against any hospital superintendent who is found by the department to have failed in this particular.

"The department would further urge that suspected cases of typhoid fever should be reported even before a complete and positive clinical diagnosis is available or declared by the clinicians in charge. The report of such cases would often put the department in a position to take most effective action to stop incipient epidemics.

"Compliance with sections 86 and 91 of the sanitary code has been very irregular and incomplete so far as these sections refer to suppurative conjunctivitis and puerperal septicemia occurring in hospitals and other institutions. Superintendents will hereafter be held strictly accountable for failure to report as required.

"HAVEN EMERSON, Commissioner."

### New York Standardizing Hospital Diets

The menu committee, comprised of the resident physicians, supervising nurses, matrons, and the dietitian of the department's hospitals, under the supervision of the director of the Bureau of Hospitals, have apparently given complete satisfaction by new dietary methods introduced in January, 1915. The department's report for the first nine months of 1915 shows a saving in the contagious hospitals alone of nearly $10,000. This saving has been accomplished (1) by actually diminishing the amount of high-priced food (meat) in the various dietaries and substituting therefor other foodstuffs equally nutritious and agreeable, (2) by eliminating waste in the preparation of the food through the use of standard menus, and (3) by giving the employees the kind of food that they wanted, thus reducing plate waste.

In favor of large hospitals it may be urged that they offer great facilities for clinical instruction, and some of them have attained great renown in this respect; but, on the other hand, there are some smaller institutions in existence which receive, almost exclusively, clinical cases, and are quite sufficient for the purpose of medical education.—F. Oppert.

# THE ADMITTING DEPARTMENT OF A LARGE HOSPITAL

## An All-Time Salaried Admitting Officer Adds to the Efficiency of the Service—Protects the Patient and the Institution—The Methods of Procedure

By DANIEL POLL, A. B., M. D., Admitting Officer, Mount Sinai Hospital, New York

ALMOST every large hospital has many more applicants for admission to its wards than it can possibly accommodate. Many persons applying for admission do not need hospital care. Some apply for an ulterior motive, but very many are in need of hospital treatment because of their financial and home conditions. Even of this latter class the number applying is too large to be accommodated, and, as a hospital aims to aid the most worthy of its applicants, these must be weeded out from the large number seeking admission. This duty has been recognized by hospital authorities as one of the important functions of the hospital, and has been assigned in many instances to a separate department.

The admitting department of a hospital is the hospital sieve, so to speak. It was formerly the custom to entrust the admission of patients to the house staffs of hospitals, or to have the work administered by a staff of visiting physicians who came at stated hours of the day to examine patients. Some hospitals still retain the latter system, but in some of the larger institutions a resident salaried officer has been installed. This is the system in vogue for the last four years in Mount Sinai Hospital in New York.

Formerly a group of visiting admitting physicians was employed. The men who held these positions were practicing physicians in the City of New York. The admitting staff consisted of a chief admitting physician and two or more assistants. The assistants were generally appointed from the younger of the hospital graduates, and divided the day with the chief physician, each man devoting about two hours to the work. It was found, however, that the men could not always come promptly at their appointed times, as their practices required their attention. Consequently applicants were sometimes kept waiting. Furthermore, the admission of patients by three or more men at different times was found to interfere with uniformity in the hospital service, as men differ as to what are and what are not hospital cases. Of course, the term "hospital case" varies with the institution, certain types of cases being excluded by rule from some institutions.

On account of the difficulties experienced with the system of visiting admitting physicians, it was decided to install a salaried admitting physician, who was to devote his entire time to the admitting department of the hospital and was not to be permitted to practice medicine privately. This latter precaution is necessary for two reasons: in the first place, the admitting officer can devote his entire time and interest to the hospital and is not distracted by his private practice. If the admitting physician were allowed to practice medicine patients and physicians might be tempted to call him to see cases, thinking that the payment of a fee for examination of a patient might influence him to admit such a patient to the hospital. The most rigid impartiality and the most absolute integrity would be no bar to suspicion or criticism on this score.

Mount Sinai usually selects as admitting physician one of its recent graduates. The salary and full time rule would not appeal to any of the older men, while such a position, from the standpoint of experience and remuneration, is alluring to a younger graduate. At the time of appointment the admitting physician is required to accept the position for a period of two years. If possible a longer term of service should be secured, for, while probably not of much added value to the physician, his increasing experience makes his services more and more valuable to the hospital.

For the post of admitting physician in a large general hospital a man with a medical training as complete as possible should be secured. This should include a training in medicine and surgery in addition to a short time spent in acquiring a fair knowledge of some of the more important specialties, such as dermatology, neurology and pediatrics. It is my opinion that a man who has had a medical service as a hospital intern, with just enough surgery to acquire a knowledge of the symptomatology of most of the acute surgical diseases, is better fitted for the post of admitting physician than a surgical intern. The surgical service is naturally the faster changing service and much time is spent by the intern off the wards. The medical intern, on the other hand, has time to get in closer touch with the patients in the hospital and, therefore, has a better opportunity for the acquisition of what is known in medical parlance as "clinical instinct." And this is a most valuable attribute for the post under consideration.

The questions, "Is this patient a hospital case?" "Is he really sick?" come up many times a day in

the admitting room of a large hospital. Where only a few moments can be devoted to the examination of each case this question must be decided quickly, and the man with keen "clinical instinct" is most competent to make the decision. For under no circumstances must a really sick case be turned away, while, on the other hand, the hospital wards should not be filled with patients who have no real ailments. In puzzling cases I have always followed the plan of giving the patient the benefit of any doubt.

In considering the appointment of a man for the post of admitting physician of a large hospital, the possession of tact and some executive ability are of quite as much importance as medical ability. In dealing with private practitioners who recommend cases to the hospital, care must always be taken not to give offense; and yet, in many instances, applications which have the endorsement of private physicians must be refused, owing either to lack of room or the unsuitability of the case. Private practitioners are prone to refer to the hospital hopeless, chronic cases, persons who, with more means at their command, could well be cared for at home. In a hospital devoted to the treatment of acute illnesses such cases must be refused. This easily produces friction, and unless such a situation is delicately handled, antagonism arises between the hospital and the private practitioner. In our institution we have always tried to avoid this whenever possible.

Then there often arises the question of patients recommended by contributors to the hospital. Some of these patients are not really hospital cases, requiring only a little ambulatory treatment and enough aid to set them on their feet again. These situations must be explained to the patient's sponsor, and their amicable adjustment often requires the exercise of a good deal of tact and care. Constantly tackling these problems can alone teach a man how best to solve them.

The system adopted in the admitting department of our hospital is briefly as follows: The admitting physician is on duty at the hospital between the hours of 9:00 a. m. and 6:00 p. m., during which time all applicants for admission are examined. As only emergency cases are admitted at night, it is not necessary to have the admitting physician on duty after 6:00 p. m. When a patient applies for admission after that hour, one of the house physicians or surgeons is called to examine him. If the case is urgent it is admitted; if not, the patient is asked to return on the following day during the admitting hours, but only after a most painstaking examination and a careful record of the findings have been made.

A large percentage of patients seeking admission to the hospital are recommended by private physicians or by dispensaries. Applicants are requested to bring with them notes from their physicians or from the dispensary, stating the nature of the ailment. This precaution does away with two evils: first, it relieves the admitting department of the dispensary case which needs ambulatory treatment. If all these patients were permitted to apply directly to the admitting department of the hospital the work could not be handled on account of its bulk; it is better to make the dispensary the feeder of the hospital than vice versa; second, this system does away with "free consultations," for many patients who are under treatment by private physicians would apply to the hospital admitting department for examination and for the confirmation or rejection of their doctor's diagnosis. Of course, this would be absolutely unfair to the private practitioner.

This rule of recommendation cannot be followed in the case of the very sick patient who comes to the hospital of his own accord, seeking admission. If such a patient presents himself he is, of course, examined and admitted. When a patient presents himself for examination with a note from a physician, his history is briefly taken and he is examined in the usual routine way. A record is kept of every applicant, whether rejected or accepted. Of course examinations must be rather superficial, and errors in diagnosis are not uncommon, owing to the large number of patients and the lack of time. If the case warrants immediate admission to the hospital, this is done, if at all possible.

Patients who do not require immediate treatment are placed on waiting lists, divided according to the different hospital departments. The "waiting list" cases, not urgent but nevertheless requiring hospital care, include many of the more common surgical and gynecological conditions, and medical cases requiring such observation and study as the hospital alone affords. A census of each ward of the hospital, taken every morning and evening, shows the admitting physician exactly how many vacancies there are throughout the institution. Each evening the census is consulted and patients on the waiting list are notified to report for admission the following day. List cases are admitted according to date of application, as far as possible. This right is set aside, however, in consideration of the gravity of the ailment; for instance, it often becomes necessary to place on the surgical waiting list cases of carcinoma. An attempt is made to admit these cases before the less serious conditions which may have preceded the cancer victim on the list.

When a case is admitted to the hospital, the admitting physician assigns it to the department to which he thinks it belongs. Where a department has been subdivided into services, cases are admitted alternately to each service; this is done to avoid any question of partiality. Patients referred to the hospital by its own visiting staff receive only the same careful consideration as all other patients, but an attempt is always made to admit the patients referred by an attending physician or surgeon to his own service.

Every case that comes to the hospital recommended by a doctor or dispensary must be disposed of in some way. To facilitate matters cooperation between the different hospital departments is necessary. Cooperation between the admitting departments of the various large hospitals of a city is desirable, but not always attainable; it is worth striving for, however, and when once attained will add to the efficiency of all the hospitals. Such cooperation permits a patient to be sent from an overcrowded hospital directly to another which may be less crowded; the advantage to the patient, and ultimately to the public, is obvious.

As I have previously remarked, it becomes necessary to refuse admission to many patients, even though sent to the hospital by a private practitioner. If the case is deemed one for ambulatory treatment, an effort is made to refer the patient back to his physician. If, however, the patient is too poor to afford this, he is recommended directly to the hospital dispensary for treatment.

The social welfare department of a hospital is often of inestimable value in aiding in the disposition of cases, which are thus taken out of the hospital sphere. Some cases are too mild to be treated in the hospital and yet cannot be cared for at home. Such instances one sees in mild chorea cases among the poor. By cooperation with a children's country hospital, I have succeeded in having quite a number of these children sent out of the city, where, with open-air treatment, astonishingly good results have been obtained.

Conducted in conjunction with the admitting department of the hospital is the district service, consisting of two practicing physicians, who see patients who are unable to come to the hospital for examination. Cases are often reported to the admitting physician by friends or neighbors, who claim that the patient is too poor to afford the services of a private physician and too ill to come to the hospital for examination. In such a case the admitting physician assigns one of the district men to examine the patient. On his report the patient is admitted or rejected. I have also utilized the district physicians to clear up the vague, and at times dubious, statements of private physicians, who have either applied by telephone or sent letters to the hospital requesting the admission of patients. The district physicians are of aid also in the temporary treatment of list cases pending admission.

It has been suggested that the admitting physician have charge of the discharge of patients. With this opinion I cannot agree. The attending physician or surgeon who has cared for a case for a period of time is the best judge as to when that case should leave the hospital.

The main criticism of the one-man admitting system in a large hospital is the superficiality of the examinations. With this criticism we must agree. But, accurate diagnosis is not aimed at, nor is it strictly necessary, since the patient will be treated by others who will study the case at leisure, and, as I remarked before, in a question of doubt as to the admission of a case, the patient is always given the benefit of the doubt.

A small observation ward of a few beds where border-line cases can be observed for twenty-four hours is of great help to the admitting physician, and often results at the end of that time in the discharge of a patient who would otherwise have been admitted.

The best method of disposing of each case referred to a hospital can only be determined by experience, acquired by constant attention to the business of admitting patients to a hospital. It is the added efficiency which is acquired by a resident physician which makes this system superior to any other. It leads to satisfaction on the part of both the patient and the private physician, and increases the efficiency of the hospital.

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**Goat's Milk Being Used at Sea View Hospital**

A herd of twenty-six goats, bred by the United States Department of Agriculture, was recently placed at the disposal of Sea View Hospital by the federal authorities. One hundred and twenty-five infants are being nourished on goat's milk, and through the cooperation of the research laboratory of the New York Health Department the clinical observations of this experiment will be supplemented by careful laboratory data. Results should demonstrate to some extent the real value of goat's milk as a food for tuberculosis children, and perhaps prove that it contains immune bodies exerting a positive action in the prevention of tuberculosis.

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The history of hospitals in the Occident is still very incomplete. The records of the earlier law and church history contain some data, but the information has not received the consideration of theologians or jurists, and least of all of medical men.

The MODERN HOSPITAL

Editorial Office . . . . . Tower Building, Chicago
Business Office . . . Metropolitan Building, St. Louis

EDITORS.

Henry M. Hurd . . . . . Fidelity Building, Baltimore
Frederic A. Washburn . Mass. General Hospital, Boston
Winford H. Smith . . Johns Hopkins Hospital, Baltimore
S. S. Goldwater . . . . Mt. Sinai Hospital, New York
W. L. Babcock . . . . . Grace Hospital, Detroit
John A. Hornsby . . . . . Tower Building, Chicago

SUBSCRIPTION.

Under domestic postage, $3.00; foreign postage, $3.50 (14 Shillings). Single copies 35 cents.

Domestic rates include United States, Cuba, Mexico, Porto Rico, Canal Zone, Hawaii and Philippines.

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## Another Source of Friction in Hospital Administration

Serious difficulties in hospital administration are often due to the lack of a proper differentiation of the regular duties of the several departments. Nurses, for example, sometimes cannot resist the impulse to regulate the kitchen or the laundry. Matrons occasionally are found who have a fixed and overwhelming desire to assume the responsibility and direction of the nursing work, to the neglect of their own duties. Physicians—and visiting physicians at that—sometimes long to undertake the distribution of pupil nurses in ward duty, and seek to instruct them and sometimes to discipline them.

In fact, almost every day some person connected with a hospital, in a spirit of the truest altruism doubtless, feels a keen desire to relieve another department of the responsibility of the work assigned to its apparent chief. In addition to administrative work, many unselfish persons, high and low, in every department find it impossible to resist the overmastering temptation to engage in the purchase of supplies. They may not have had any experience in such duties, but they are inwardly impressed with a conviction that they know what they wish and are willing to undertake the task—at the expense of the hospital. The result of all this is a confusion of duty, a mingling of responsibilities, and a loss of efficiency, costly to the institution, all of which are most unwise.

The governing principle in every hospital should be departmental independence and autonomy, regulated and controlled by and through the superintendent. If the superintendent is the proper person for the position, he or she knows the needs of the hospital and the resources at command, and manages it accordingly. He is also familiar with the condition of the various departments, and can apply the spur to the weary or the curb to the impetuous much better than can any other person. He does not require the services of the nurse to manage the laundry or the kitchen, or those of the matron or physician to manage the nursing department. Each of these departments should have a competent head. It is his duty to supply the proper person for this work, and to hold up the hands of the heads of the various departments in order to prevent them from being raided by well-meaning persons who may, in fact, be indifferently acquainted with their own duties.

The watchword of every large institution should be departmental independence, coordinated through the office of the head of the hospital. Hands off! should be written over every door. In this manner only every head of a subordinate department can have an opportunity to work out his own methods and to develop his powers and to show his capacity. The application of the same principle is necessary for the success of small as well as large and complex organizations. Why should hospitals be an exception to the rule? Nothing makes more for the development of the head of a department than a consciousness that he is trusted and is free to meet problems in his own manner, as long as he does not interfere with the policy of the hospital or violate its regulations. After all, results should be sought by every executive, and methods should be left to the energy and initiative of the person who is charged with the responsibility of the work.

HENRY M. HURD.

## Beauty as a Curative Agent

More than 500,000 people are sick in the hospitals of the United States every day in the year. The average stay of these people in the hospital is about two weeks; the average cost for the maintenance of these sick people is $1.50 per capita. This means that more than $750,000 are expended every day for the care of the sick. This does not include interest on invested funds and new construction.

If it were possible to shorten the time of these sick people by even one day, there would be a sav-

ing to the hospitals of this country amounting to approximately $750,000 every two weeks, or an amount aggregating $18,000,000 per year.

Mr. Grosvenor Atterbury, Fellow of the American Institute of Architects and the architect who built some of the new structures connected with Johns Hopkins Hospital, in an address recently at the dedicatory services of the Henry Phipps Psychiatric Clinic of Johns Hopkins suggested that while the medical profession and the hospital people considered it highly necessary that the sick in the hospitals should be surrounded by pleasant odors as against the older offensive smells of ether and iodoform; and that, while it was considered necessary that there be quiet in the hospitals, and that, in deciding on a site for a hospital, quiet and freedom from noises were given great consideration, the sense of sight seemed to make no appeal for consideration. On the contrary, he stated, asepticism, with its glaring white walls, severely simple furniture, and freedom from draperies and curtains and the little incidentals of home comfort, seemed not to be necessary, and yet, he argued, if the eye is the "window of the soul," why was it not quite as important to impress the mind of the sick through the eye by the use of harmonious colors and pretty things?

Mr. Atterbury has no doubt that the medical profession and the hospital people believe that sweet smells and harmonious sounds, or freedom from noise, have much to do with the recovery of the sick, and he has no doubt that physicians feel that these aids to their treatment serve in an immeasurable degree to shorten the stay of the sick in the hospitals.

Then why, he argued, would not pleasing sights and harmonious colors and agreeable forms also serve to shorten the stay of the sick; and, even regarding the matter wholly from a financial standpoint, he believed that money would be saved if some attention and a small amount of expense were given to simple but artistic decorations. It was his experience that architects were obliged to fight with hospital boards, physicians, and administrators for every dollar of expense incurred in architectural ornamentation in the beautification of the buildings and in the creation of pretty things.

There is very much to be said in favor of Mr. Atterbury's contention, and we are wondering whether the hospitals are not thinking just a little too much of the severities of hospital requirements, and if they are not ignoring too much the artistic things that appeal to the eye. Simple, plain draperies for the window in quiet, harmonious colors, pleasing tints in the wall colorings, a few good pictures on the walls—these things will not cost much money, and there is no doubt that a home atmosphere and the things that spell home to the sick would have a large influence on their recovery.

As Mr. Atterbury points out there need be no compromise with aseptic requirements in pleasing the sense of sight of the sick, because it costs no more to decorate the walls harmoniously than it does to enamel them with ordinary white paints. Simple draperies and curtains for the windows can be washed without trouble, and they last a long time. And now we are coming to the time when the necessity for pictures in the hospitals is impressing a number of commercial concerns, and they are offering or about to offer for hospital use very choice pictures, copies of the old masters and some excellent photogravures of good paintings by more recent artists, to be put on by a modification of the old decalcomania process, where the picture and its frame are impressed directly on the painted wall, so that the painting can be washed whenever the wall is washed, and allow no places for dust and dirt to accumulate, and the processes of cleaning a room or a ward can be accomplished precisely as though there were no paintings there.

## Shall the Out-Patient Department Include a Division of Hygiene?

The life extension movement, which is now in full swing, proposes to apply the teachings of medical science to the prevention of disease in a more effective way than has heretofore been customary.

Efforts to prevent disease may be of a social character, attacking conditions which affect large groups of persons, or they may be directed toward the individual. The first method is one which is properly related to government, and which lends itself readily to the national, state, or local department of health; the second appeals to sanitarians and to other qualified persons who are in a position to reach and to influence the individual. While efforts of this latter kind have hitherto been left to the private physician or to the agents of various voluntary associations which undertake to promote health, it is now generally understood that the hospital and its normal adjuncts, the out-patient department and the laboratory, are in a position to play a useful part in this movement. I would suggest that each hospital establish a department of hygiene as a branch of its out-patient service.

The principal work of the proposed department of hygiene would be the periodic physical examination of individuals for the early detection of any morbid tendency which is susceptible to con-

trol by hygienic measures. By this means many constitutional diseases may be prevented or postponed. But every available opportunity to inculcate the principles of wholesome living should be utilized, and to this end intimate relations should be established between the proposed department of hygiene and the educational bureau of the local department of health. I refrain from suggesting a complete program, because such a program should be prepared with a full knowledge of the institutional resources which are available as well as of the peculiar needs of the locality.

The establishment of the proposed department of hygiene would be an innovation; this is about the strongest argument that can be made against it, and I am convinced that it is an argument that will presently yield to the pressure of an insistent demand for a wiser, saner, and more profitable use of the teachings of modern medicine.

S. S. GOLDWATER.

### Miss Goodrich Joins Our Editorial Force

THE MODERN HOSPITAL had the misfortune recently to lose the services, as editor of the Department of Nursing, of Miss Mary M. Riddle, who has been obliged to retire on account of ill health. The editors of THE MODERN HOSPITAL greatly deplore the loss of Miss Riddle, and we know that our readers and the hospital world generally will regard her retirement as a serious impairment of the service of one of our most important departments.

But in this fine old world of ours it seems to be almost universally ordained that each cloud, as it passes over, gives way to an ever brighter and more glorious sunshine, and we are delighted to announce that our editors have unanimously chosen Miss Annie W. Goodrich, Teachers' College, Columbia University, as Miss Riddle's successor, and Miss Goodrich has accepted the chair, beginning with the March number.

It would be entirely superfluous to tell the hospital people of this country—indeed, of any country—who Miss Goodrich is. Her name and her work are household possessions in the realms of medicine, nursing, and hospital administration, and we are sure that she will have the enthusiastic support of everybody—only please let that support take active form, to the end that the actual physical work that Miss Goodrich has undertaken may be reduced to the smallest possible amount. There is a good deal of drudgery in any editorial work, and, if the hospital people and those in the nursing and medical professions will contribute to Miss Goodrich's pages, there will be far more time left in which she may think about the bigger and broader things in this inspiring and busy field of ours.

We look forward with glowing optimism in anticipation of Miss Goodrich's association as one of the editors of THE MODERN HOSPITAL. Just now happens to be an epoch of evolution; many medical and nursing and hospital standards are in the making; there are a few rough, incongruous spots here and there in the fabric of coordination, but there is no doubt in our mind that Miss Goodrich's participation is to be a most influential factor in smoothing out the wrinkles and rough edges, and that the hospitals, the sick, the poor, and the helpless in every walk of life and in every corner of the earth are to be better off for the new and added opportunities that are to come to her brilliant mind, her fine training, and her broad humanity.

### Who Shall Manage the Training School for Nurses?

The original relation of the nurses' training school to the hospital was formerly much more clearly defined than at present. The school was not a part of the hospital, but was allowed to have access to it on trial as a matter of privilege —it was considered by all to be an experiment. At Bellevue Hospital, New York, and also at New Haven, Boston, and Chicago the first schools were established outside of the hospitals by philanthropic and broadminded women, anxious to promote the training of nurses, who gained access to hospitals only by entering into contract with them to do a portion of the nursing. They not only supplied the nurses and appointed their officers, but also attended to the housing of nurses and provided for the maintenance of the schools. They did not furnish nurses for the whole hospital, but supplied such selected portions as they were permitted to enter. Their nurses were viewed with suspicion by the hospital management, and to some extent by the physicians who were in attendance on the hospital. The hospital authorities sometimes regarded the presence of women nurses in their wards as a tacit criticism on conditions which had formerly existed. The managers of the school, in their turn, found sufficient ground for open criticism in the condition of the wards and the methods of nursing the patients which had not been placed under the care of their nurses. The visiting staff also entered into the controversy, many being warmly attached to the old system, under which the nursing had been done by "natural," "heaven-born" nurses, and others being in sympathy with the movement and co-

operative in the new work. The hospital consequently did not always appreciate the nurses; nor could the nurses, in such an atmosphere of criticism and controversy, develop their own methods in the best manner.

It is not strange that it soon became necessary to establish training schools as an integral part of the hospital, under superintendents appointed by the hospital authorities and responsible to them for the performance of their duties. At first this was done only to a limited extent, but the practice rapidly grew, and at the present time nearly all hospitals have their own schools, and the work of the training school is regarded an important part of every hospital organization. The school, in fact, has become an essential part of hospital machinery, and no general hospital at the present day can think of dispensing with its training school. Although the evolution of the system has been remarkably successful, the situation is not everywhere free from difficulties. Many hospital superintendents still think that even the minor details of the management of a school should be lodged in their hands, and that nurses should be appointed, trained, and disciplined by them as were the old-fashioned and untrained nurses. On the other hand, the superintendents of schools who came into the hospital training schools after they had received training in outside schools regard the training school as a separate entity, and have difficulty in becoming reconciled to the conception that it is an integral part of the hospital.

The proper and efficient relation of the training school to the hospital would seem to be not difficult to determine. Every school should belong to the hospital and should be responsible to it for the education of nurses and the nursing work of the hospital. The trustees should feel the same responsibility for the school as for any other department. They should foster and promote its ends in every practical way. They should select and appoint a competent superintendent, and should give her authority to select proper candidates for appointment as pupil nurses. It is manifestly unfair to hold the superintendent of a training school responsible for nursing the inmates of the hospital and at the same time give her no voice in the selection of her nurses. To do proper and efficient work, the superintendent must have such assistants as she can trust and develop. The final right of definite appointment, however, must rest with the trustees. Appointments recommended by the superintendent of nurses, approved by the superintendent of the hospital, should in the end be definitely made by the trustees or managing board of the hospital. Such final appointment by the trustees is essential to the proper fulfillment of the duties and responsibilities of the board in order to avoid the contingencies which may arise growing out of accidents or negligence on the part of employees. The principle of law which has been sustained by many courts provides that hospitals shall not be liable for damages, provided their governing boards exercise due care and consideration in the appointment of officers, nurses, and employees. The managing board of the hospital must use due diligence and proper care in making all appointments, and the usefulness of the nurse is largely increased when she has thus received her appointment after careful investigation as to her character and fitness to undertake the work.

The responsibility for the character of the nursing, however, must belong to the superintendent of nurses, and, to assume this to her own satisfaction, she should have the selection of pupil nurses. No person has the right to ask any artisan to do a specified task and at the same time forbid him to select his own tools. This is equally true of one who is responsible for the education of nurses. All courses of study should be arranged by the superintendent of nurses after consultation with the superintendent of the hospital. All assignments of duty of nurses should be left to the same authority. It is impossible to give nurses a rounded and complete course of instruction and experience when they are assigned to duty according to the whims of physicians. It must not be forgotten that the object of the training school is not alone to secure nursing for the hospital; it is equally to give a proper education to the pupil nurse. She comes often at great sacrifice of time and money, at an age when her earning capacity is at its highest, to secure her training in nursing. She has a right to be educated as well as utilized. This fact should never be lost sight of.

These principles are already well established; they should be acted on in all good hospitals and training schools. The spirit of criticism sometimes manifest in large hospitals on the part of the hospital managers, the attending staff, and the managers of the training school is to be deprecated. Each department is inclined to see the defects of other departments. What is needed rather is a spirit of forbearance, charity, and fair dealing to attain mutual aims in every direction. If the governing principle of the independence of all departments of a hospital, coordinated through the superintendent under the board of trustees, can once be generally established, the main source of trouble may be removed.

HENRY M. HURD.

## THE UNIT DRESSING PACKAGE

### A Simple Plan That Will Afford Dressings to Meet Any Case—Asepsis and Uniformity the Main Objects

BY CARL E. BLACK, B. S., A. M., M. D., Jacksonville, Ill.

In visiting hospitals for the purpose of observing the details of surgical work, I have been impressed with the lack of uniformity in the methods of preparing and handling surgical dressings. The plan most frequently observed is that of having the dressings in jars or other broad-mouthed receptacles, from which they are taken with forceps as required. Very little objection can be urged against such a plan if the dressings are always kept in the receptacle in which they were sterilized, always kept covered, and always handled by one person, who, of course, must be thoroughly trained in surgical technic; even then there is a possibility of contamination from one patient to another.

Not infrequently one sees that the dressings have been transferred from the container in which they were sterilized, and that they are used by numerous nurses and doctors for as many different purposes. Under such circumstances the dressings can never be relied on to remain sterile, and no surgeon would accept them in his operating room service.

There is a general disposition to give the dressing of wounds a secondary position entirely inconsistent with its fundamental importance. The instruction of nurses and assistants is indifferent. The surgeon is frequently seen to abandon the case before the wound is closed, and usually he gives little or no attention to the dressing of the wound. It is in septic cases that we see the most carelessness in dressing. Not infrequently we observe the greatest care and precaution in making the first dressing in a clean abdominal case which is completely healed throughout and which it would be practically impossible to infect, while a drainage case in which there is a large quantity of pus is left to inexperienced hands, or is handled in a careless and indifferent way. Some seem to think an infected wound does not require the care that should be given a clean one, while, as a matter of fact, the pus wound requires all the attention necessary to a clean wound to prevent mixed infection, and it presents the additional problem of a scrupulous technic which will prevent infection of other wounds in the same patient or wounds in others. Care must be taken that none of the secretions come in contact with clean hands, dressings, or other things which may reach other wounds. Not infrequently soiled dressings or secretions are dropped on the floor, or come in contact with clothing or other things from which they may infect others. Much greater care in the details of technic necessary in pus cases than in clean ones should be constantly impressed on all who dress wounds.

In order to overcome some of the difficulties and objections to certain methods in vogue, and to make dressings safe from the possibility of contamination, we have devised what we call the unit dressing package. In many dressing rooms the technic seems to be based on the mistaken idea that if a wound is infected it is unnecessary to take particular care in its dressing. As a matter of fact, it should require greater care to properly handle an infected wound, abscess, or ulcer than a clean one. Because a wound is infected with one pyogenic organism does not give the dresser license to allow it to become contaminated with other pyogenic organisms or with germs of some specific infection. The fundamental element in the progress of handling septic wounds is "surgical cleanliness." Sterile hands, sterile field surrounding the abscess or ulcer, sterile solutions, applications, and dressings have been the ultimate achievements of listerism. Any method which makes for these conditions will bring a more prompt healing and an absence of complicating infections to septic as well as clean wounds.

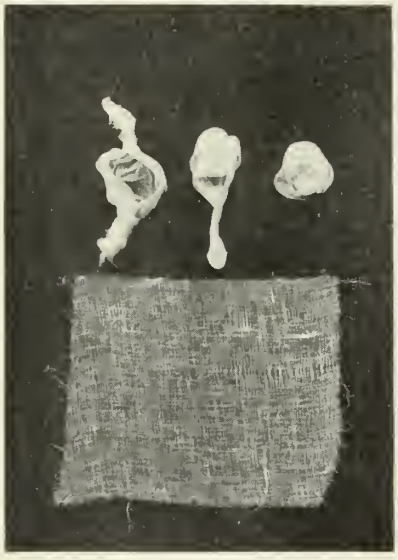

Fig. 1. Finger sponges and method of making them from one-sixteenth yard of gauze.

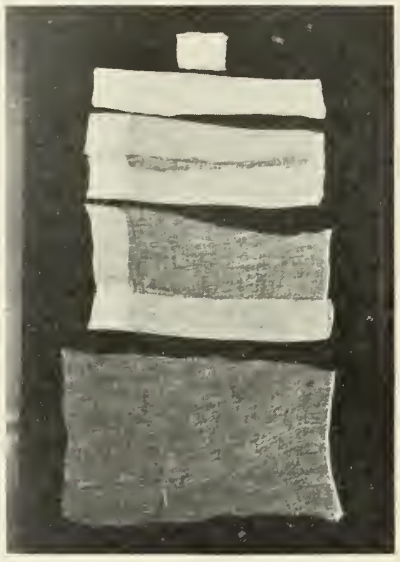

Fig. 2. Small dressing and method of making it from one-eighth yard of gauze.

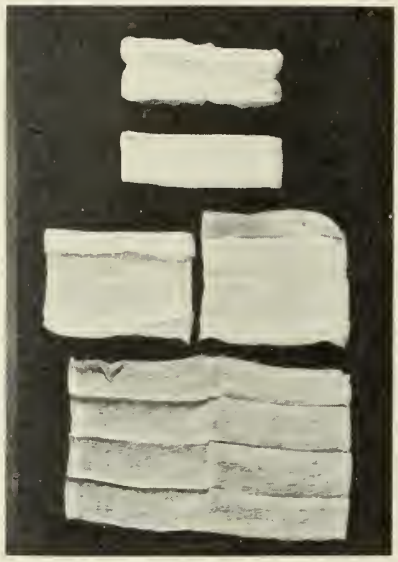

Fig. 3. Large dressing and method of making it from one-fourth yard of gauze, and supplementary package containing four large dressings.

By our plan each patient has a package which is adapted to his needs, the packages are kept sealed until the moment they are required for use, and none of the contents are used for a second patient until resterilized.

The unit on which these packages are based is 1 square yard of gauze and 1 pound (16 ounces) of cotton. The packages are divided into four sizes. In addition to this, there are two supplementary bundles. Each package consists of a muslin cover, a pad of cotton (which is protected by one layer of gauze), finger sponges, small dressings and large dressings.

For example, 1 pound of cotton makes 64 No. 1 pads (Fig. 4) of equal size, or 32 No. 2 pads of equal size, or

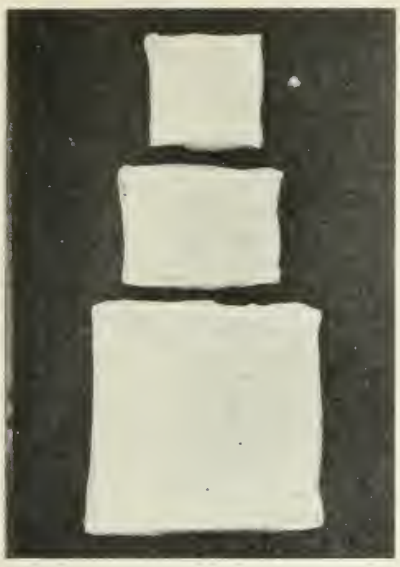

Fig. 4. No. 1, No. 2, and No. 3 cotton pads in gauze covers.

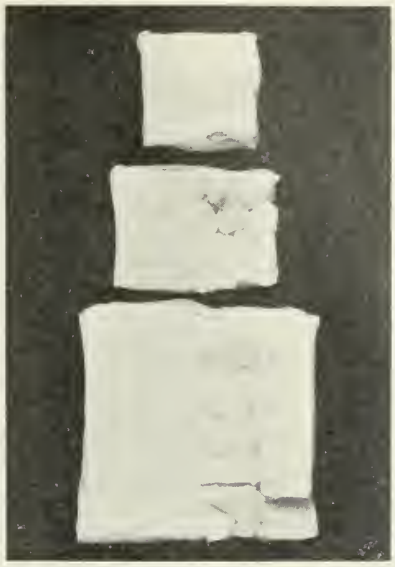

Fig. 5. No. 1, No. 2, and No. 3 dressing packages, with finger sponges and large and small dressings in place ready for muslin covers.

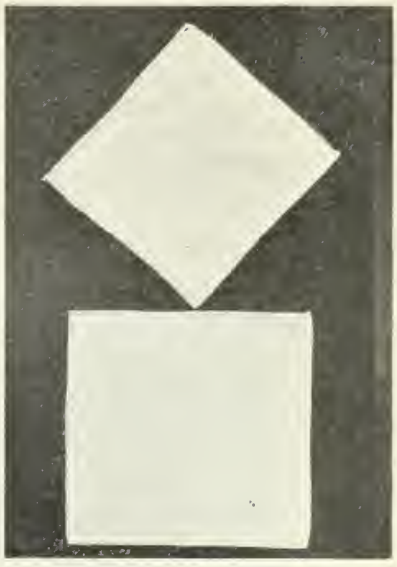

Fig. 6. No. 1 (12x12 inches) and No. 2 (16x16 inches) muslin covers ready to receive the dressings.

16 No. 3 pads of equal size, or 8 abdominal pads of equal size. A yard of gauze will make 16 finger sponges (Fig. 1) of equal size, or 8 small dressings (Fig. 2) of equal size, or four large dressings (Fig. 3) of equal size. The No. 1 and No. 2 bundles contain a pad of cotton, finger sponges,

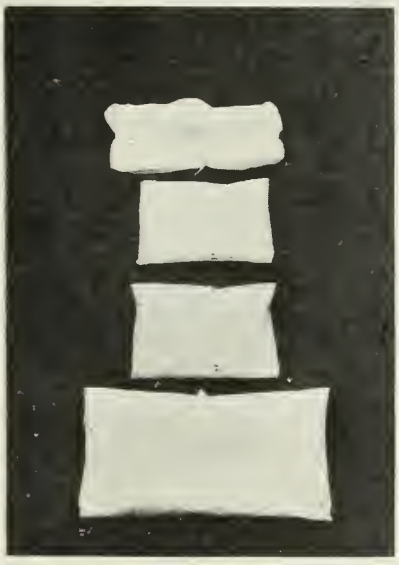

Fig. 7. Supplementary dressing package and No. 1, No. 2, and No. 3 dressing packages folded and pinned ready for sterilizing.

and small dressings (Fig. 5). The No. 3 bundle contains a cotton pad, finger sponges, small dressings, and large dressings, while an abdominal bundle contains a heavy pad, large dressings, and a binder. There are two small bundles, with which, in special cases requiring unusual amounts of dressings, any of these can be supplemented. Each package has its own muslin cover (Fig. 6), which is marked with its number.

To go more into detail: A No. 1 package (Fig. 5) has a muslin cover 12 x 12 inches, marked "No. 1." This cover contains 1 cotton pad of ¼ ounce of cotton; 3 finger sponges, each having $\frac{1}{25}$ yard of gauze; and 4 small dressings, each made of ⅛ yard of gauze.

The No. 3 package has a muslin cover 20 x 20 inches. This cover contains 1 cotton pad of 1 ounce of cotton; 6 finger sponges, each containing $\frac{1}{25}$ yard of gauze; 6 small dressings, each containing ⅛ yard of gauze; and 4 large dressings, each containing ¼ yard of gauze.

The abdominal package contains 1 cotton pad of 2 ounces of cotton; 6 large dressings, each containing ¼ yard of gauze; and an abdominal binder. The binder may be used as the cover, or a separate cover may be provided.

In addition, there are two supplementary bundles, one containing 6 small dressings, each made of ⅛ yard of gauze, in a muslin cover 6 x 6 inches, and the other supplementary bundle consists of 6 large dressings, each made of ¼ yard of gauze, in a muslin cover 8 x 8 inches.

One of the important features of these bundles is the manner of placing the supplies in the covers. The accompanying illustrations will greatly assist the word description. The supplies must all be put in the cover in the same way each time, in order that those handling them may open them properly without danger of contamination, and so that the various articles will be presented to the one doing the dressing in their proper order. The surgeon or nurse making the dressing does not always have

a b c d

Fig. 8. a, nurse holding package ready to break the seal (remove the pin); b, first movement in opening package; c, second and third movements; d, fourth movement and package open ready for surgeon or dresser.

the assistance of a trained person, and, by having the packages uniformly built, a novice can be shown how to open the package without contaminating the contents.

The cotton pad is first laid down on the cover (Figs. 5 and 6), with its corners pointing to the center of the sides of the cover, so that the corners of the cover are folded in, and the last one comes over the center of the package when it is pinned and acts as a seal. The finger sponges are placed on one corner of the pad and made to occupy

Fig. 9. Tin container in dressing room for supply of dressing packages, etc., and having on the lid printed directions for using and preparing the packages and other articles.

one-fourth of the pad, and the small dressings are placed on the adjoining corner and also occupy one-fourth of it, the two together occupying one side and one-half of the area of the pad. The pad is then folded over in the middle, so that the finger sponges and dressings are inside the pad. The cover is then folded over in such a way (Figs. 7 and 8) that first the corner nearest the finger sponges and small dressings is brought over to the mid-

Fig. 10. Dressing packages on side table. Three of them open for use.

dle of the pad, and then one corner is brought across the pad from the end and then another across the other end, and finally the fourth corner is brought over and held with one pin, so that the pad and dressings are completely incased in the cover in such a way that they could not possibly become contaminated. It is then ready to be sterilized.

Each package, of whatever size, is folded on the same plan, so that the nurse or doctor in taking it into his hands knows just the position which the supplies will occupy when the package is opened. The finger sponges and dressings (small or large) are the parts which come in direct contact with the wound and from which infection from contamination of the dressing is most likely to be received. For this reason these are completely covered by the cotton pad, which protects them in much the same way that the cotton plug or stopper protects the sterile broth or serum in the test tube (Fig. 8). The package is opened by removing the pin, which, after sterilizing, makes a good seal; that is to say, it is easy to tell by the condition of the pin and the muslin around it whether the package has been opened since it was sterilized. No package from which the pin has been previously removed should be used.

The package is taken on the hand, the pin removed, and the corners turned back in the reverse order from that in which they were put up, and the dressings exposed without the least danger of contamination. If the first package used does not contain sufficient material for the needs of a particular dressing, a small supplementary package or a large supplementary package may be used in addition. A case may require two or more packages. If the package contains more supplies than necessary, the material which is not used is saved and made up into new packages for the next sterilizing. Of course the covers are used repeatedly until worn out by sterilizing. In a

Fig. 11. Equipment of dressing packages, supplies, and instruments for ordinary use in a dressing room.

factory where they are prepared for such work, the muslin pad could be replaced with an oiled paper cover and carton, although our experience would suggest that the soft muslin cover will take up less room and will do away with any loss from unused portions of the package, which are always saved for new packages for the next sterilizing.

It is a great advantage to the surgeon or nurse making a dressing to be able to select or call for a package by number and know exactly the form, size, and position of each article of its contents. Such a plan is easily taught and learned, and secures uniformity of method (Fig. 9). The plan so frequently seen in hospitals of numerous forceps and fingers being dipped into broad-mouthed jars or boxes is pernicious. Such methods tend to demoralize technic and fail to impress on nurses and assistants the great importance of preventing infection in clean wounds and the danger of mixing infection in those already having a single infection which we are seeking by our dressings to eliminate. The handling of dressings by physicians in their office, at the bedside in the home, or at the place of primary dressing in the case of accidents is almost uniformly bad. It is only the exceptional physician or surgeon who has worked out a technic for such occa-

sions, yet we probably all agree that the primary dressing is the most important event in the treatment of every wound.

Our effort has been to develop a single plan which will be simple and easily prepared, and at the same time will be adapted to use in the hospital, in the home at the bedside, or for the street and roadside emergency.

At the hospital and office, in addition to the packages of sterile dressings, instruments, basins, towels, and other accessories are kept sterilized and ready for use (Fig. 10). All of these things are put up in muslin covers, and all, excepting the instruments, are prepared in the steam sterilizer. The instruments are put up in small bags, each containing the necessary instruments for one dressing, and sterilized dry in a formalin sterilizer. To meet the requirements of the daily routine, two varieties of packages have been found sufficient. The first contains one pair of scissors, one pair of thumb forceps, and one probe; the second, one vaginal speculum, one long uterine dressing forceps, one uterine sound, and one uterine applicator. One of these packages, or a combination of the two, will meet the requirements of the great majority of cases. There will always be a few cases for which special instruments will have to be prepared. The dressing room service will know how many routine dressings are to be made the next day, and enough packages of all kinds are prepared and ready, so that each case, whether clean or septic, has separate freshly sterilized instruments, basins, towels, dressings, and other accessories, and it is not necessary to use from the same package for any two patients. To meet the emergencies, enough extra packages are always ready. Special packages are prepared from day to day as required for special or unusual cases.

Since adopting this plan at the hospital, no surgeon has had just cause to complain of either a lack of properly sterilized supplies or that his patient might have been infected from some other patient which preceded his in the dressing room. Such instruments, basins, etc., as are required in the dressing room are not expensive, and there is no reason why every dressing room should not be abundantly supplied.

For a number of years we have kept quantities of the packages of dressings of all sizes on hand at the hospital and at the office, as well as in our emergency bags (Fig. 11). They pack compactly and take up comparatively little room, and one can be assured that they will remain sterile, as the part of the dressing which comes in contact with the wound is thoroughly protected by a layer of cotton on all sides. We have found them convenient and in every way satisfactory, and, in addition, they furnish a unit plan of making dressings which is a great advantage in teaching nurses and others how dressings should be made and what may be required for a dressing. We rarely ever require anything other than what we have in these bundles. Such packages are susceptible of infinite variation to meet the needs of the patient or the individuality of the surgeon without interfering with the unit principle on which they are based.

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Patients in fifteen hospitals for the insane in New York State average 47.10 years of age, according to figures which have been compiled in connection with the recent state census. The average age of first admissions was found to be 38 years. In 1911 the annual per capita cost of maintenance in the New York state hospitals was $189.71; in 1915 it was $210.89. Out of 6,265 first admissions in 1914, 3,301 were found to have no family history of insanity, and the family history of 1,506 others could not be ascertained. The remaining 1,458 each had at least one insane relative.

## LARGE DISTRIBUTION OF HOSPITAL FUNDS

### New York Saturday and Sunday Association Pays Out Over $136,000—Executive Committee Makes Recommendations

In the annual report of the Hospital Saturday and Sunday Association of New York city, issued December 22, announcement is made that 120,990 patients were treated in the associated hospitals last year, and that of this service 73 percent was free to the poor. The executive committee, among other things, recommends that the name of the association be changed to the United Hospital Fund of New York. The committee also advocates these three propositions in its report:

A statistical bureau that would collect, digest, and disseminate significant facts regarding the hospital facilities, activities, and needs of the whole city.

A practical handling of the dispensary problem, with a view to standardizing this great service, making it as effective as possible, and thus to some degree relieving the pressure on hospital service proper.

A study of workmen's compensation, with a view to the full utilization of voluntary hospitals and their just remuneration in connection with such cases.

The total contributions received during the year amounted to $125,004.85, while the total disbursements aggregated $136,372.25. The balance on hand on October 14, 1915, was $4,557.66.

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### New York City's Free Antitoxin Distribution

The following table, which appeared in a recent issue of the weekly bulletin of the Health Department of New York city, gives some idea of the extent of the use of antitoxin, and is significant in that it shows an increased incidence of diphtheria in the boroughs where there had been a falling off in the use of free antitoxin.

| | 1913 | | 1914 | |
|---|---|---|---|---|
| | Valuation | Cases of diphtheria reported | Valuation | Cases of diphtheria reported |
| Free Distribution— | | | | |
| Manhattan | $ 53,454.75 | 6,113 | $ 42,283.50 | 7,927 |
| The Bronx | 17,507.50 | 2,035 | 17,074.00 | 2,409 |
| Brooklyn | 50,232.00 | 5,226 | 40,358.25 | 5,627 |
| Queens | 5,314.50 | 1,003 | 5,826.50 | 924 |
| Richmond | 1,346.75 | 158 | 1,994.25 | 193 |
| New York city | $127,855.50 | 14,535 | $107,536.50 | 17,129 |
| Antitoxin sold | 33,319.74 | | 73,471.98 | |
| Total dispensed | $161,175.24 | | $181,008.48 | |

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### Ohio Hospital Training-Schools Being Standardized

The new nurse practice act, which went into effect in Ohio on January 1, provides for registration of graduates in nursing who hold diplomas from a nurse training school in good standing connected with a hospital or sanatorium in good standing, as defined by the State Medical Board. The board has conducted a thorough investigation of all hospital training schools, and will in the future make periodic inspections of those recognized in good standing, to make sure that they are maintaining their course along the lines demanded.

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By the will of Mrs. Martha A. Miller, of St. Paul, Minn., who died in December, $1,000,000 in property and $400,000 in cash are bequeathed for the erection and maintenance of a hospital in St. Paul as a memorial to Mrs. Miller's husband, the late Charles T. Miller. The size of the hospital is not stipulated, but it must contain at least 50 free beds. The trustees named to erect and manage the hospital are Wm. Dawson, 903 Goodrich avenue; Dr. J. T. Rogers; E. H. Bailey, president First National Bank; J. I. H. Field, of Field, Schlick & Co.; and T. D. O'Brien.

# CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
*Army Medical Museum and Library, Office of the Surgeon-General, United States Army.*

**Capacity of the Hospitals in the Principal Cities of Italy** (La degenza ospedaliera nelle principali citta italiane). Riv. ospedaliera, Roma, 1915, V, No. 20.

Official statistics show that the hospital accommodation of Milan is 4,028 beds; of Roma, 3,274; of Turin, 1,857; of Genoa, 1,488; of Venice, 1,483; of Florence, 1,030 beds. Bologna, Pisa, Brescia, Padua, Pavia, Catania, and Parma have each between 500 and 1,000 beds; fourteen cities have more than 300, and six more than 200 beds.

**The New Hospital at Careggi, Florence** (Il nuovo ospedale di Careggi, Firenze). Dr. Baldassari. Ospedale Maggiore, Milano, 1915, III, No. 8.

The city of Florence has decided to do away with its old and antiquated hospitals and to erect a large new hospital in the suburbs. A large area of land was acquired for this purpose at Careggi. Two pavilions for tuberculous patients have already been erected, one for men and one for women. These buildings are each 101 meters in length and contain two stories besides a spacious basement. The hospital, when completed, will have 18 pavilions for general diseases symmetrically located along a central street. Each building will be 108 meters long, and consist of two stories and a basement. Three pavilions will be erected for infectious diseases. They are to be located at a considerable distance from the other buildings, and will practically form a hospital for themselves. The new hospital is to be completed as early as possible, and will have room for 1,000 patients.

**The Binet-Simon Tests.** William Ravine. Lancet-Clinic, 1915, CXIV, No. 26.

The following conclusions are based on experience with various methods of measuring the intelligence of young children:

1. The Binet-Simon tests are the best and most systematic method for the measuring of the development of the intelligence of young children.

2. They are but one sign or symptom of the mental status of an individual.

3. Various factors or conditions can influence the replies and rating of the individual examined—namely, emotional states, indisposition, poor nutritional states, fatigue, etc.

4. Standardize as much as you will, the personal element in the rating cannot be eliminated.

5. In the hands of the inexperienced and untrained, and those lacking medical and psychiatric training and experience, if used to rate or stamp individuals as retarded or defective, they are defeating their purpose, and working an injustice on the individuals examined.

**The Expenses of Managing a Mountain Sanatorium** (Il costo di esercizio di un sanatorio in montagna). Dr. F. Gatti. Tubercolosi, Milano, 1915, VII, No. 11.

At the Philadelphia meeting of the International Association for the Protection Against Tuberculosis a committee was appointed to ascertain the average expenses of people's sanatoriums in the various countries. The superintendents of 115 of such institutions answered the set of questions sent out by the committee. The author compares the data furnished with those of the sanatorium of Prasomaso, Italy, which spent $1.23 per patient per day. In Germany the average expenses in 38 institutions which replied to the committee was $1.02. But in Germany many sanatoriums are located in the plains, and those in the mountains are reached by good roads or even by railroads. Electricity and drinking water are frequently furnished by neighboring towns or villages, all of which contributes to reduce the expenses of these establishments, though the living expenses are higher in Germany than in Italy. The French sanatoriums had the lowest expenses, as they amounted to only 80 cents per patient per day. In the sanatoriums of England each patient has his own room, which accounts for the high average expense—namely, $1.50. While the expenses of mountain sanatoriums are higher than those of lowland sanatoriums, experience has shown that the mountains are more favorable to a permanent cure of pulmonary tuberculosis than the plains.

**Disinfection of the Hospital Trains in the Intrenched Camp at Paris** (Desinfection des trains sanitaires dans le camp retranché de Paris). Dr. Bordas. Rev. d' hyg., Paris, 1915, XXXVII, No. 7.

All hospital trains coming from the front are disinfected at five stations in the suburbs of Paris, at Landy, Pantin, Ivry, Villeneuve-Saint Georges, and Batignolles. About 230 cars are daily disinfected at these stations. The disinfection is not confined to the destruction of microbes on the floor, seats, windows, etc., but extends also to parasites which are capable of transmitting infectious diseases. Among these parasites, pediculi are the most dangerous, as they are the carriers of typhus fever. The cars are first swept clean of all refuse, straw, rags, etc., which are burned; then they are thoroughly washed and scrubbed with a hot lye solution, the alkaline liquid penetrating into all the cracks of the floor, seats, etc. For the final disinfection a solution of hypochlorite of calcium is used. By means of a Bertrand apparatus a strong spray of this liquid is forced into all the cracks and recesses of the car, and, when the air in the car is filled with the vapors of the solution, it is tightly closed and remains so for twenty-four hours.

**Surgical Specialties in Hospitals.** Paul Thorndike. Boston Med. and Surg. Jour., 1915, CLXXIII, No. 23.

A special genitourinary service was organized about a year ago at the Boston City Hospital. Every other genitourinary case, male or female, is admitted to the fourth surgical service of twenty beds devoted exclusively to the care of urological cases; the other half distributed among the three other surgical services, that these may not be entirely deprived of their genitourinary cases. The experiment, although it has not created an ideal special department, has provided the hospital with an adequate urological service from both the patient's and hospital's point of view. It has, further, made a teaching unit which can utilize its material adequately for medical school purposes. The writer intimates that this urological service, steadily progressing in interest and value, may quite possibly be the forerunner of similar services for other branches of surgical work.

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# DEPARTMENT OF NURSING

Conducted by MISS ANNIE W. GOODRICH,
*Teachers' College, Columbia University, New York City.*

Please address items of news and inquiries regarding Department of Nursing to the editor of this department, Teachers' College, Columbia University, New York City.

## An Administrative Problem—The Prevention of Typhoid Fever Among Nurses and Hospital Attaches

BY ELMER H. FUNK, M. D.,
Philadelphia, Demonstrator of Medicine, Jefferson Medical College; formerly Medical Director of Jefferson Medical College Hospital.

The question of the health of hospital attaches, particularly that of the nurses, has always been a matter of deep concern to those in charge of nurses' training schools connected with both large and small institutions for the care of the sick. The frequency of contact, indeed the intimacy of contact necessary in the medical care of patients with infectious diseases, makes hospital attendants particularly liable to infection unless the greatest precaution is constantly observed. Fortunately the more contagious diseases, smallpox, scarlet fever, diphtheria, etc., are cared for as a rule in institutions employing only trained attendants. The general hospitals, however, care for a large group of diseases which, though not actively contagious as understood with reference to the previously named diseases, are nevertheless easily transmissible if constant precaution is not observed. Notable among these diseases is typhoid fever.

The frequency of typhoid fever among nurses has been noted by a number of observers. Joslin and Overlander found in six hospitals in Massachusetts during a period of five years (1902 to 1906, inclusive) that twenty-six nurses contracted typhoid while in training. They estimated at that time that the typhoid morbidity rate among nurses was 161 in 10,000 living, as compared with 20 in 10,000 living, for the general population. In other words, the hospital nurse in Massachusetts was about eight times as liable to contract the disease as the ordinary citizen.

Spooner, in an investigation carried out at the Massachusetts General Hospital in 1909, found that during the preceding ten years twenty-seven cases of typhoid fever were contracted in the hospital. Of this number nineteen were in nurses.

Pierce found at the Winnipeg General Hospital that during the ten years prior to 1911 seventy-one cases of typhoid occurred among the attaches, forty-eight of whom were nurses, an average of five a year. At the Johns Hopkins Hospital, from 1889 to 1906, according to McCrae, there were fifteen instances of infection among nurses, of whom eleven had been nursing patients with the disease. In our own investigation at the Jefferson Hospital, Philadelphia, it was found that during a period of fifteen years prior to 1912 fifteen cases occurred among nurses, or an average of one a year.

Typhoid fever in a nurse is usually the result of contact infection. Among our fifteen cases known contact was established in nine instances. The contact was of the nature of repeated exposure to infection in the direct nursing of a patient or a group of patients with the disease. In the other six instances, definite recent contact could not be established, at least prolonged exposure to infection was not known to exist. It is impossible to rule out the casual contact which might occur, for example, in temporary relief duty in wards other than the regular assignment, or with carriers who are not known as such when they are admitted to the wards, or in the operating room or surgical ward in the surgical typhoid lesions.

The following case is of interest as illustrating contact infection of a nurse from a patient in the surgical service. Miss X. was on duty in the men's surgical ward, which contained a patient who about three weeks before had been admitted and operated on for typhoid perforation. After the operation a fecal fistula developed which required frequent changes of dressings. During the day this duty was performed by the intern and at night by the nurse. The nurse was informed of the care to be exercised with regard to wearing of gloves, cleansing of hands, etc. In about two weeks she was taken with a severe attack of typhoid fever, with profound toxemia and many hemorrhages, and for a while it seemed as if she would probably succumb to the violence of the infection.

The importance and frequency of contact infection, therefore, must be fully realized in the effort to prevent the disease among hospital attendants. The pupil nurse should not be allowed to care for these patients until she has been thoroughly instructed with regard to the disposal of the excreta, the disinfection of the linen, nursing utensils, etc., and the scrupulous cleansing of the hands following every handling of the patient. Where these precautions are exercised typhoid fever ought not to be a menace to the health of the nurse. As a matter of fact, however, it is to be regretted that carelessness occurs and in a measure accounts for the frequency of the disease among them in the past.

It would seem, in view of Pierce's statement, that ninety percent of all cases are contracted in the first and second years of training, that it is not wise to entrust the nursing of typhoid patients to pupil nurses in the early part of their course. In our experience among fifteen nurses, nine were ill during the first year of training; four during the second year and three during the third year.

That carelessness, however, is not limited to pupil nurses is evidenced by Spooner's finding that during the ten-year period when nineteen pupil nurses contracted the disease, twelve graduate nurses were admitted to the hospital during the same time. However, if there is one lesson which the past should teach us it is this, that the first instruction given to the training school matriculant should cover those principles of preventing disease spread which must be enforced unceasingly if contact infection is to be avoided.

In the effort to reduce the frequency of typhoid among hospital attendants several of our foremost institutions took up several years ago the question of the prophylactic inoculation of typhoid vaccine as practiced so successfully in the military service of the United States and the other countries of the world. Lack of space forbids the recital of the remarkable results which have attended the use of the vaccine among the troops. Medical literature, which is easily available, reveals a rapidly increasing mass of evidence. Those hospitals which were pioneers in the use of antityphoid vaccination among nurses are beginning to realize the infrequency of the disease among them as compared to the days before its use. At the Winnipeg General Hospital, where inoculation has been practiced for three years, only one doubtful case occurred, and one other case in the only nurse who refused inoculation.

In July, 1912, the prophylactic inoculation of all nurses in training at Jefferson Hospital was made compulsory. Since that time, and during a period of three years, only one doubtful case has occurred. In this instance a mild febrile disturbance of about two weeks' duration occurred in a nurse who had not been in known contact with a typhoid patient, and who for some time had not been feeling well. Headache, anorexia and malaise had been present for about two weeks. The temperature on admission, April 1, was 100, pulse 92 and respiration 24. A few suggestive spots were seen upon the abdomen. Splenic enlargement was not demonstrable. At the end of fourteen days fever subsided and convalescence was rapid. The leucocyte counts on April 2 and 14 were 8,400 and 8,200, respectively. The blood culture, April 6, was negative. The Widal test performed on April 2, 14 and 30, was reported as "marked cessation of motility with slight agglutination, suggesting a faintly positive reaction."

Almost without exception it has been found in those hospitals where prophylactic immunization is practiced that the incidence of the disease has been reduced. In a previous article, which appeared in the New York *Medical Journal*, September 4, 1915, the writer tabulated the replies which he received to a questionnaire addressed to a number of large hospitals in ten of our large cities. From the facts so obtained it was evident that there was an increasing tendency to the use of antityphoid vaccination, although but few institutions made its administration compulsory. All these institutions, however, would probably be unanimous in their views with regard to vaccination against smallpox. Why not against typhoid fever? The harmlessness of antityphoid inoculation compares favorably with that of vaccination against smallpox. In our experience the majority of individuals experienced no inconvenience whatever; the most frequent disturbance was a transient soreness at the side of injection. A few had slight constitutional reactions, such as headache, malaise, and a rise of temperature to 99.5° or 100° F. for a few hours. Probably less than one percent were incapacitated for work, and then only for a day.

In conclusion I think we are justified in saying that a wider application of antityphoid immunization among nurses will result in a distinct reduction in the incidence of the disease among them; a reduction which has not been accomplished in the past by instruction in the application of sanitary measures alone. It should never be used with the thought of minimizing the importance of sanitary measures, but rather as an additional safeguard which experience teaches us is necessary, particularly among those who come in close and repeated contact with the disease.

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The Bethany Methodist Hospital, Kansas City, Kas., has recently opened a new building, erected at a cost of $200,000. This hospital will now be able to care for 150 to 175 patients, which will mean an increase of 100 to 125 beds over its former capacity. Dr. John McLean Moulder, formerly at the head of the Methodist Episcopal Hospital at Indianapolis, is superintendent of the new Bethany, with Miss Ethel Hastings as superintendent of nurses. Miss Vera Wederbrook is assistant to Miss Hastings, Miss Rebecca E. Galt has charge of the nurses in the operating room, Miss Ella H. Vanneman is obstetrical supervisor, and Miss Dilla C. Steiner is dietitian.

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The New York city Department of Health has opened a new hospital for contagious diseases on the Black Stump road, between Jamaica and Bayside, Long Island. The building is of the mission type of architecture. It is three stories high, with a wide porch running entirely around it, and has over 20,000 square feet of floor space.

## RULES GOVERNING AN OBSTETRICAL SERVICE

### Kansas City General Hospital Fixes Rigid Technic for All Operations in That Department—Cleanliness and Vigilance Are Chief Aim

The following rules governing the obstetrical department of the Kansas City General Hospital have recently been promulgated by the attending staff, of which Dr. George C. Mosher is chief. It is suggested they may be of value to other hospitals:

These rules are adopted in order to secure a uniform routine technic and are to be followed as the Kansas City General Hospital method. It is not expected that every obstetrical emergency is met in so limited a space, but it is believed that by this means more beneficial results may be attained for the department and our patients.

### RULES

Ninety percent of puerperal troubles are due to infection.

Intern in obstetrics is to be from clean surgical service. No intern nor nurse from isolation building, genito-urinary nor receiving ward is allowed to examine or deliver a woman in labor.

#### VISITORS TO THE DEPARTMENT

No visitors allowed in delivery room except obstetrician, anesthetist and nurses. No other interns nor physicians from other departments nor nurses who are on other service admitted to these wards; this rule is imperative. In operative procedures a limited number of physicians, interns and nurses are welcome as spectators. Street clothing must be covered by coat or gown furnished by nurse before visitors enter ward. No visitors, except near relatives, allowed in the wards, and these by permission of the office. Coats will be furnished visitors at the door, and must always be worn over street clothing while in the ward.

#### ON ADMISSION

The history of each patient is to be taken and a thorough physical examination made.

Pelvimetry findings of each patient to be recorded on admission to ward, blood pressure recorded within twelve hours. Urinalysis within twelve hours; every ten days thereafter while waiting; if pathological, oftener; if physical findings demand (i. e., condition of kidneys, circulation, and pelvic measurements) notify Attending.

#### PREPARATION FOR LABOR

Bowels moved, by enema; sponge bath, vulvar hairs clipped or shaven, clothing changed; no vaginal douche, ante-partum nor post-partum, without consultation with Attending. Intern and clean nurse must wear sterile gloves while handling, dressing or examining patient; if soiled in the labor change gloves. In cleansing patient always scrub from anterior of vulva toward anus. Discard swabs. Beware bacillus coli. Notify obstetrician before using catheter, after ten hours' delay. Use of rubber catheter not desirable in normal labor unless pressure by delayed presenting part prevents voluntary voiding. If catheterization necessary, it is to be done by intern, not over once in eight hours; catheter to be used by sight only. Use of bed pan is recommended rather than having patient out to jar. Use every expedient before catheter.

Restrict vaginal examinations—each vaginal examination to be recorded with reason why it is done.

### CHOICE OF ANESTHETIC

In absence of kidney symptoms, chloroform in perineal stage only; ether or nitrous oxide if prolonged labor, is to be preferred. Petuitrin never to be used except in delay of head on perineum.

*Third stage of labor.*—Grasp cord with hemostat just outside of vulva. When placenta moves out of uterus into vagina, hemostat drops two inches. Thirty minutes to be allowed for delivery of placenta unless it is voluntary.

### REPAIR OF PERINEUM

First degree by intern—beyond this call Attending. Material: Internal, chromicized catgut; external, silkworm gut. Be sure to grasp torn ends of muscles, not a skin closure, which is not a repair of tissues. Repair of cervix not to be done except for arterial hemorrhage. Call Attending; if excessive hemorrhage, in emergency, vaginal pack is advised, and condition of patient watched by intern until she is safe, or Attending arrives to decide as to repair. When patient's pulse is under ninety put in Fowler's position.

Before cutting cord, wait five minutes after delivery of child. In asphyxia use tubs, hot and cold; artificial respiration, oxygen. Carefully examine for abnormalities before turning infant over to nurse.

### ROUTINE CARE OF NEW-BORN

Cleanse eyes and instil Ag. No. 3, by dropper; use one percent. Follow with salt solution to remove excess. Rinse but do not wash mouth with swab. Dress cord with salicylic acid one part to starch five parts, after application of alcohol to stump. Binder snug, not tight, chest expands one inch first twenty-four hours. Plenty of water; always hold bottle while baby drinks. Weight, temperature and b. m. to be recorded daily. Do not massage infant's breasts. Apply binder. Nursing new-born infants during first two weeks should be at three-hour intervals, except in very robust infants, when four hours is preferable. Bottle must be held by nurse, not propped, during feeding. Nursing at breast ten minutes each feeding. Weight before and after feeding to be recorded. Average child loses one-fourteenth weight first seven days, then gains four ounces a week. Wassermann of new-born to be made and recorded in each case.

### OPHTHALMIA NEONATORUM

If pus in either eye, notify Attending, and isolate the baby. Take smear for laboratory.

*Circumcision.*—Not to be done unless ordered by Attending Obstetrician—then by consent of parents.

In placenta previa, eclampsia, or post-partum hemorrhage, notify Attending.

### EMERGENCY IN HEMORRHAGE

Elevate foot of bed, grasp fundus, knead to contraction. Hot douche 110 to 115 F. Hot cloths to limbs if cold. Petuitrin 1 cc., or ergot 1 cc., hypo—the latter only after uterus is empty. Watch patient while pulse is over 100. Have ready soda solution for hypodermoclysis, or saline solution for proctoclysis; camphorated oil, caffein and strychnine if urgency demands.

### EMERGENCY IN ECLAMPSIA

*Routine Treatment.*—Blood pressure daily, milk diet; emergency treatment; purge; hot pack; cold cloths to head; fluid extract veratrum if pulse over 100. Sodium bromide gr. 40 and chloral gr. 20 by enema if convulsions threaten. Repeat in two or four hours as indicated by restlessness. Folded napkin or clothespin between teeth to prevent tongue being bitten. No chloroform nor morphine in eclampsia. Remain with patient and call Attending, on first symptoms of convulsions, unilateral headache, epigastric pain, disturbed vision, or blood pressure over 140. At onset of eclampsia give calomel gr. X, or croton oil gtt ii on sugar well back on tongue. If patient does not swallow use gavage. Do not restrain patient except to prevent injury.

### SEPSIS IN MOTHER

Note following indications:

(a) Headache.
(b) Insomnia.
(c) Anorexia.
(d) Sudden diminution of flow.
(e) Rapid pulse (over 100).
(f) Temp. over 100 after 48 hours.
(g) Tenderness over uterus.

As a general rule any patient having temperature of 100½ F. forty-eight hours following delivery and after thorough emptying of bowels, is to be isolated and not returned to the ward until temperature is normal forty-eight hours. A thorough bath, washing of hair and complete change of clothing must be ordered for her.

### ROUTINE TREATMENT OF ABORTION

Expectant plan recommended; no curette unless ordered by Attending Obstetrician. Fowler's position unless pulse over 100. Sterile packing cervical and vaginal for hemorrhage.

## GENERAL RULES

All house officers, nurses and pupils must remain standing in the presence of an attending surgeon or the superintendent, and shall under no circumstances sit upon the beds or hold conversation with each other, either in the operating rooms or on official rounds.

Rounds shall be made each morning, those present being the intern and ward nurses. Rounds will begin in the antepartum ward, then in the general wards and lastly the babies' ward.

Each case shall be examined in the following order: head, neck (goitre), chest, abdomen, extremities, vulva and pad.

The intern will dictate his observations to the nurse, who will write them in the history, which notes when finished will be personally signed by the intern. The intern will then give such instructions to the nurses as are necessary.

Charts must not be removed from the hooks except for observation or making notes on regular rounds.

The intern will be held responsible for his prompt attendance upon all cases reported from the office for admission to the ward. In case he cannot leave any case that may be in process upon his floor, he must immediately notify the office, which will in turn notify the superintendent, who will call a substitute from a clean service.

The same proceeding will be carried out in regard to ambulance calls.

All obstetrical operations will be performed in the fourth floor operating room when possible. The persons permitted to see these operations will be:

(a) The resident staff, when not needed for their own duties.

(b) Any pupil or nurse from the junior and senior classes, not in attendance on infectious cases.

(c) Outside physicians holding cards.

*Diet of Lying-in.*—Cup of tea or glass of warm milk soon after delivery if no nausea or anesthetic. First day: liquid diet—milk, milk toast with tea, coffee or cocoa; three or four-hour intervals. Second day and third day: simple soups, meat broths, soft-boiled eggs, boiled custard. After third day: light diet—scraped beef, mutton, chicken in small quantities, baked potato, rice, cereals. By fifth day, general diet with nourishment, milk, cocoa, or broth between meals.

Period of lying-in is to be governed by disappearance of red and brown lochia, not by number of days; may be eight days, may be twenty-four; involution to be watched by height of fundus and patient treated as an individual.

Final examination and signed report to be made by intern in each case before discharge of patient from ward. Note involution, condition of cervix and perineum, also general state of both patients.

In normal puerpera discharge will be on twelfth or fourteenth day. In presence of complications in puerperium, date of discharge will be delayed, and decided by attending obstetrician.

## INFORMATION ON LEGISLATION WANTED

### Chairman of the Committee on Legislation American Hospital Association Ready to Work and Wants Help —Everybody Please Respond

Dr. H. T. Summersgill, chairman of the Committee on Legislation of the American Hospital Association, addresses the following letter to the hospital people:

December 17, 1915.

Superintendent of the Hospital:

In presenting the report of the Committee on Legislation at our next convention, I desire your cooperation in securing the following information for this committee, which you recognize will be of advantage to all the members of our organization:

All new state laws enacted in your state since January 1, 1915, which are of interest to hospitals and institutional workers. This information can easily be secured either from your secretary of state or from some law library in your state. I desire to know also if you have any law governing the working time of your employees or nurses—that is, whether you are limited to an eight- nine- or ten-hour day. If you do have a law regulating the length of time of employment, reducing it to eight or nine hours a day, is it of advantage or disadvantage to your institution?

It will be desirable not to make this report until the first of April in order to cover legislation up to that time. As legislation is a matter of very great importance to all hospitals and institutions, your cooperation in this matter will be of great assistance, not only to the association members, but to all institutions, and I especially request that this matter be given special attention.

H. T. SUMMERSGILL, Chairman.

### Y. W. C. A. Clubhouse for Nurses

The central clubhouse for nurses under construction in connection with the Young Women's Christian Association, on East Forty-fifth street, New York, will be thirteen stories high, and contain 218 single and 18 double rooms in addition to offices, library, rest rooms, dispensary, reception rooms, a sewing room, tea room, cafeteria, and roof garden.

Dr. Beverly Randolph Tucker opened a private sanatorium at Madison and Franklin streets, Richmond, Va., in January. The institution occupies the General Bradley T. Johnson mansion, which was purchased by Dr. Tucker at a cost of $70,000 and remodeled.

# PHILANTHROPY AND THE PUBLIC HEALTH

Conducted by THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director,
*Department of Family Welfare.*
DONALD B. ARMSTRONG, M. D., Director,
*Department of Social Welfare.*

Please address items of news and inquiries regarding Philanthropy and the Public Health to the New York Association for Improving the Condition of the Poor, 105 East Twenty-second street, New York City.

### Impeaching the Sneeze

BY HOLLAND HUDSON.

A sneeze, says Webster, is "a sudden, violent, audible, spasmodic expiration through the nose. It is usually a reflex act due to irritation of the nasal branches of the fifth pair of cranial nerves." Webster's definition is conservative, for the sneeze is also one of the most potential means of spreading respiratory diseases. German experimenters, with their characteristic thoroughness, recaptured test organisms nine meters away from the sneezer

First prize poster. Three-color work by a girl in the eighth grade. One of the poster stamp designs.

and his paroxysm. But how can you interdict "a reflex act due to irritation of the nasal branches of the fifth pair of cranial nerves?" Would you indicate the excision of these nerves? Would you insist on a voluntary inhibition of the reflex? Would you establish a safety zone of nine meters? Or would you rely rather on prophylaxis in the form of a handkerchief?

The Bureau of Public Health and Hygiene of the New York Association for Improving the Condition of the Poor decided for handkerchiefs. They propose to popularize the handkerchief as a conscious prophylactic against respiratory diseases. A "Watch Your Sneeze" campaign was planned by Mr. Philip S. Platt, superintendent of the bureau, with a premonition of its comic possibilities. The opening gun of the campaign, which is now carried on officially by the Department of Health of New York city,

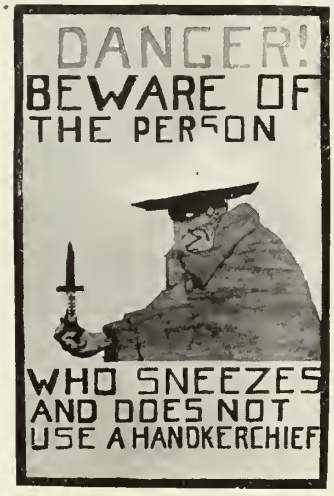
was a poster competition for elementary school children. Twenty-four cash prizes were offered for the posters which best expounded the potential danger in sneezes and extolled the advantages of the handkerchief. Designs were submitted by five hundred children. Almost every school in Greater New York was represented. The children "got" the idea and got it quickly. They drew pertinently and

Another prize winner.

well. Some of the designs are reproduced in the accompanying illustrations.

The first prize winner is to be reproduced as a three-color poster stamp, which, with another stamp by Reinold Reiss, of the Society for Modern Art, will be supplied at cost to health officers and social agencies throughout the United States.

The first newspaper notice of the poster awards was a chortle from "header" to last line. But it sowed winged




A melodramatic view of the subject.

seed. Overnight the sneeze had become city "news copy" in New York city. Reporters besieged the commissioner of health and his aids, and their illustrated interviews were given first-column positions and catchy "headers" by the editors. New York's clever "colyumists" and their "contribs" took up the idea and rhymed new couplets and quatrains about it. Editorial writers turned on the subject the searching white light of their omniscience.

The Department of Education, pleasantly surprised by the work submitted in the poster competition and alarmed at the growing number of absentees from respiratory affections, sent out circulars to school principals, instructing them to condemn the dangerous sneeze and to laud the protecting handkerchief.

The posters submitted have been made into a traveling exhibit, whose itinerary will make it possible for every public school pupil in New York to read five hundred versions of a sneeze "J'accuse." Thousands of the three-color stamps from the prize-winning design will be distributed among New York school children.

The Bureau of Public Health and Hygiene, A. I. C. P., will gladly send stamps at cost to all health officers, social agencies, or physicians desiring to use them as defensive ammunition in resisting the prevailing epidemic.

## KANSAS ORGANIZES HOSPITAL ASSOCIATION

### Topeka Gathering Adopts Constitution Patterned After That of Ohio, and States Pretty Definitely What Kansas Hospitals Want

At the last meeting of the State Medical Society of Kansas some of the physicians who are connected with hospitals in the state got together and decided to organize a state hospital association. They appointed a committee to investigate the matter, to draft a constitution, and to call a meeting as soon as they were ready to report. This committee was composed of Dr. J. T. Axtell, of Newton; Dr. Sam Murdock, Jr., of Sabetha; and Dr. W. R. Dillingham, of Halstead.

The meeting was called December 30, 1915, at Topeka. Fifteen representatives were there. The report of the committee was heard and accepted, and a constitution patterned after that of the Ohio Hospital Association adopted. The first officers of the association are: president, Dr. J. T. Axtell, of Newton; vice-presidents, Dr. Samuel Murdock, Jr., of Sabetha; Dr. F. W. Shelton, of Independence; and Dr. J. C. Hall, of McPherson; secretary-treasurer, Dr. W. R. Dillingham, of Halstead.

The purpose of the organization, as stated in the constitution, is to promote economy and efficiency in the management of the hospitals in the state. Another purpose, which is not specified, but which is of interest to most of the hospitals, is to start a movement to have every hospital doing charity work exempt from taxation, whether incorporated as a charitable institution or not. It is planned also to raise the standing of the training schools for nurses, and to that end will adopt a standard equal to that of the American Hospital Association.

All of these things were freely discussed by all the delegates present and were fully agreed upon. During the afternoon session addresses were made; one by Harry C. Bowman, member of the State Board of Control, who has compiled statistics showing the amount of charity work done by the hospitals of the state and the amount of state aid given during the past year; Joseph W. Howe, secretary of the board, spoke of the work of the board and the appropriation of the state funds; Dr. J. J. Sippy, state epidemiologist, Dr. S. J. Crumbine, secretary State Board of Health, and W. J. V. Deacon, registrar of vital statistics, spoke of the work of their various departments and its relation to the hospitals.

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At a recent joint meeting of the Maryland Lunacy Commission and members of the governing boards and superintendents of the several Maryland state hospitals for the insane, it was decided to ask the state Legislature for a total appropriation of $1,409,800 for 1916, nearly $1,000,000 of this sum to be devoted to the erection of new buildings.

# PREVENTION OF BLINDNESS
# MATERNITY

Conducted by CAROLYN CONANT VAN BLARCOM, R. N.,
*Secretary National Committee for the Prevention of Blindness; Chairman Committee on Prevention of Blindness and Midwives, National Organization for Public Health Nursing.*

Please address items of news and inquiries regarding Prevention of Blindness—Maternity to the editor of this department, 130 East Twenty-second street, New York City.

## The Need of More Efficient Obstetrical Care Among the Poor

BY DR. RALPH WALDO LOBENSTINE.

Mauriceau called pregnancy "a disease of nine months' duration." Engelmann, after comparing the labors of primitive and civilized people, says that "a simple, natural labor is no longer possible," and, further, "the parturient suffers under the continuance of an old prejudice that labor is a physiological act." The majority of thoughtful students of this phase of life agree that a function that kills thousands of women every year, that cripples many thousands more, that is responsible for a very large infant mortality, can hardly be called physiological. Of all the branches of medicine, the practice of obstetrics is the most exacting, the most poorly supplied with experts, the most open to criticism, and the most poorly paid.

In 1912 in the registered portion of the United States, which comprises from 60 to 65 percent of the population, 9,035 maternal deaths from parturition were reported. Inasmuch as these comprise only one section of the country, and inasmuch, moreover, as many deaths undoubtedly due to parturition are somewhat later reported under other diagnoses, the total number of maternal deaths amounts in all probability to between 15,000 and 20,000 annually. In New York state alone in 1913 there were approximately 1,300 deaths from the puerperal state; of this number 459 died of some form of infection, 285 deaths were due to labor, 169 deaths to medical causes complicated by pregnancy, and 319 deaths due to the toxemias of pregnancy. In the registered area of the United States the total annual mortality from septic infection has averaged since 1900 between 39.7 percent and 47.8 percent of the total number of maternal deaths. What a travesty in these enlightened days!

Moreover, approximately 50 percent of the gynecological operations are performed for injuries resulting at the time of labor—injuries many of which are preventable—most of which could at least be fairly satisfactorily treated at the time of their occurrence or soon thereafter. The truth is that we cannot estimate the number of partial or complete invalids who are invalids as results of either poor nursing, inefficient medical attention, or meddlesome midwifery at the time of miscarriage or at the time of labor. (This, of course, includes the first ten to fourteen days post-partum.) Furthermore, spontaneous and criminal abortions occur with astounding frequency. Many women have some criminal procedure carried out on every occasion of a suspected pregnancy. The great majority of women have little or no care at such times. Thousands never recover their health, as a result of ignorance, thoughtlessness, and failure to grasp the real significance of an unnatural termination of pregnancy.

The most potent reason for the temporary success during the past year in the arousing of rather widespread interest in the so-called "twilight sleep" came from the fact that for the first time the public was brought to a realization of some of the trials and tribulations of the parturient. This was apparently one of the first occasions in which large groups of women became aware of conditions so prevalent in obstetrical practice in this country.

Turning to the new-born child or to the one as yet unborn, we find a state of affairs still more alarming—40 percent of the deaths occurring under 1 year of age are seen to take place before the end of the first month of life. The causes that bring about this high death rate are substantially the same as those we know to exist in the case of still-births. In both instances the mortality is largely dependent either on conditions affecting the mother during pregnancy or to accidents of labor. The chief exception to this statement is to be found in those infants that die from some intercurrent infectious disease, or some form of blood poisoning, in no way related to the condition of the mother. For the most part the causes of death during the first four weeks of life would appear, then, to be due, not to disease successfully attacking a previously healthy child, but to physiological unfitness in the newly born to maintain an independent existence. Two-thirds of these deaths may be ascribed to causes which suggest cell deterioration in the ante-natal stage, and find pathological expression in the various forms of immaturity.

Exact estimation of the relative importance of each "group of factors" is very often difficult, if not utterly impossible. We do know, however, that both intrapartum and intrauterine mortality can be greatly reduced by proper measures.

*Actual death* is one thing, but what about the child that lives for awhile or for many years immature in body and mind, or actually deformed? These are the really pitiful cases—the cases that make every thoughtful man and woman stop and think. These abnormal or subnormal beings are in part thus because of causes over which we have more or less control, and in part because of factors arising in the course of pregnancy or during labor over which we may at times be almost powerless—in general at least this is true.

The more readily understandable ante-natal causes are syphilis, alcohol, renal disease, sexual excess, marked use of tobacco, deficiency in the food supply of the mother, subnormal state of father at the time of conception, and bad physical environments during pregnancy. Of all these, syphilis is unquestionably the severest offender. J. Whitbridge Williams, in his study of 705 fetal deaths in 10,000 deliveries at the Johns Hopkins Hospital, showed most forcibly the terrific ravages brought about by syphilis in the early developmental stages of life—26.4 percent of the still-births were attributed by him to syphilis. He was, moreover, forced to believe from placental investigation that syphilis existed to even a larger extent than this figure would indicate. No doubt this high percentage was in part dependent on the large number of the colored race which he had as patients; nevertheless the percentage is very impressive. The less tangible ante-natal factors belong to the complex toxemias of pregnancy. These unquestionably are most potent in their damage to both mother and child, but so far in their relationship to the latter they have been largely overlooked.

Health statistics are particularly difficult to deal with

in this country because of the incomplete registration area. In the registered area existing today there are to be found fairly accurate mortality statistics, but the birth records are still incomplete and the still-birth records far from reliable. (Illinois, for instance, is not included in the registration area at all, as it has no vital statistics law). We have practically no record of the large number of abortions, spontaneous or induced, that occur annually. Even in our large hospitals the causes of still-births are very inaccurately determined. In numerous cases, as has been shown by Lee Thomas and a few others, the causes of death as they appear on the still-birth certificates, or, in fact, on the infant death records, are notoriously uncertain. In those states in which notification of births and still-births is practiced the time limit for such notification varies from three to ten days. Improvement in the statistics of still-births would be furthered by the adoption of some such law as the English "Notification of Birth Act," which requires notification to the local board of health within thirty-six hours of all births, still-births, and deaths. This, furthermore, is a distinct advance in the development of better medical supervision. Were it possible for a health officer to investigate at once all cases of still-birth and early infant deaths—not in a spirit of criticism, but in a spirit of helpfulness—many lessons could be learned that no doubt now are lost. This measure is now being carried out in New York city largely by trained nurses in the case of midwives.

According to the mortality statistics of the United States Census Bureau for 1911, approximately 63,000 babies died in the registration area before they had lived to be one month of age, and of this number more than 69 percent were estimated to have died of pre-natal causes or injuries or accidents at birth. These figures, I repeat, represent merely from 63 percent to 65 percent of the population. According to Mrs. Max West, of the Children's Bureau of Washington, if to this number were added the number of still-births occurring annually, we should have approximately 150,000 deaths of infants under one month traceable to conditions existing prior to birth or to the birth itself. These estimates reveal to us the enormity of the loss to the nation. To this loss must be added the great number of miscarriages, of which there are no records, and yet which, when spontaneous, are more or less dependent on the same causative factors as in the case of still-births and subnormal infants.

As I have stated above, we cannot accurately determine to what degree the estimated 120,000 to 150,000 still-births are due to intra-partum or ante-natal causes. Quoting Bacon, of Chicago: "We would probably find that from 60,000 to 70,000 of these die during labor as a result of the labor itself, and in the neighborhood of 15,000 more die within a week from labor as a result of injury at that time; that is, we should have about 80,000 annual deaths due to labor alone." Summarizing in percentages the causes of these intra-partum deaths, Bacon found that malpresentations were responsible for 30 percent; forceps operations, 30 percent; miscellaneous causes, such as placenta pravia, ablatio placental, ruptured uterus, toxemia of pregnancy, 15 percent; and pathological uterine contractions, 25 percent. In New York state, including New York city, in 1913 there were reported 228,713 births and 10,471 still-births. The following table of infant deaths under one month in New York state shows these still-births arranged according to cities of 100,000 or more.

| | |
|---|---|
| State of New York | 10,105 |
| Albany | 101 |
| Buffalo | 655 |
| New York | 5,108 |
| Rochester | 290 |
| Syracuse | 190 |

The ultimate blame for this high mortality of both mother and child is in general the following:

First—Insufficient training on the part of the physician.

Second—Insufficient remuneration for obstetrical work.

Third—Failure to properly license the midwife (progress along this line in certain sections is rapidly taking place).

Fourth—Ignorance and indifference on the part of the laity in matters concerning parturition.

Fifth—Lack of ante-natal care.

It is truthfully claimed that 90 percent of our American women are absolutely without pre-natal care. Of all the progressive countries, the United States is the most backward in this regard.

So far I have attempted to present to you a brief sketch of the obstetrical situation that is more or less general in this country. I will now ask you to consider with me some of the measures that seem necessary in order to diminish this large waste of life, to raise the standards of the community, and to promote individual health and well being. In passing, we should recall that approximately 40 percent of the labors throughout the country have been handled, in most part, by careless, surgically dirty, untrained midwives. A large percentage of the other 60 percent of the women have been in the care of physicians poorly trained in obstetrics, who have been graduated from the medical schools with a minimum amount of practical equipment for this branch of medicine. These measures are:

First, *the midwife.*—There are two prevalent views regarding this midwife question. According to the first view she is merely considered an abomination; an unmixed evil, having no reason whatever for existence; an individual who should speedily be thrust aside. For does she not produce innumerable criminal abortions; is she not responsible for much infant mortality, much puerperal infection, and consequently much maternal mortality? Does she not because of her wide practice deprive the doctors of approximately 40 percent of their legitimate practice? According to the second viewpoint, the midwife is considered not only an instrument for evil, but one for a considerable amount of good. She has had her "raison d'etre." She certainly has done much good in the past, despite her all too frequent lack of education, her lack of cleanliness, her ofttimes low moral conception. The adherents to this view—and I am one of these—sincerely believe that as yet the time has not come in this country when they can be ruthlessly wiped off the slate. Those who hold this belief hope for their gradual elimination by compulsory registration, by raising the application standards, and by obliging them to pursue a prescribed course in some such school as the Bellevue School of Midwifery, or by accepting them only after a reasonable training with a physician in good standing, who himself is possessed of a fair obstetrical knowledge. In time the midwife may, I trust, be totally eliminated, but to eliminate her now would accomplish but little good, and would probably greatly increase the discomforts and sufferings of the poor women among whom they practice. No one can, I believe, honestly deny this statement. As I have just said, I for one believe in greater and greater restrictions, but as we restrict the practice of the midwife, so much the more are we obliged to give the poor parturient women something better in their stead. As Dr. Josephine Baker, of the Health Department, rightly says: "One of the great drawbacks to the speedy elimination of the midwife is the strong racial prejudice in her favor that exists so commonly among the foreigners."

Second, *the doctor.*—The disheartening conditions to be found among the doctors practicing obstetrics in this class

of the community are due to circumstances brought about partly by faulty training and partly by sociological conditions. If in many instances the doctor is no better than the midwife, it is not the doctor that is primarily at fault —unless he is guilty of criminal negligence—but the system of training, almost universally prevalent in this country, that has afforded him a scandalously small amount of practical obstetrical experience either before or after graduation. It is a severe criticism of the system existing in state and municipal government that has allowed any physician, no matter how meager his training, to practice obstetrics where so much is at stake and where he is forced to cope with great responsibility, forced to meet emergencies of very great severity, without having been in any measure whatsoever properly fitted for this work. And there is really no reason why the average man should be in the least degree competent to meet emergencies and abnormalities liable at any time to arise in the course of obstetrical practice, considering that the vast majority of our graduates have not had more than two to four weeks' practical training in this branch. Those men who, by choice or by fate, engage in confinement work among the very poor have my deepest sympathy. It is a singular fact that so much time is devoted in our medical schools and hospitals to general surgery and so little to practical obstetrics. The former the young graduate will need to a minor degree only, the latter to a far greater degree. It is indeed strange that but few of our fine general hospitals are willing "to be bothered" with confinement cases. Why is this so? Chiefly, I think, because they regard obstetrical cases more or less as nuisances, and do not appreciate the great importance to the community of the proper care of these patients under such circumstances. Certainly no one thing in life affects so many women as parturition, and yet almost to this day the "specialty" has not occupied any great amount of dignity in this country.

Third, *pre-natal care*.—We undoubtedly are all agreed, some more than others perhaps, as to the desirability—yea, the necessity—of increased facilities for the carrying out of this pre-natal work. The finest skill at the time of delivery may not, and frequently cannot, save the life of the child or even the life of the mother where pre-natal care has been insufficient or entirely wanting. For years in France, Pinard has been constantly urging the need of these pre-natal clinics. He was among the first to accentuate the importance of fatigue as a causative agent in premature births; an early advocate for making it possible for the wage earner to cease from her hard work during the last two or three months of pregnancy.

That the results more than compensate for the time, trouble, and money expended has been beautifully illustrated by the work of the New York Milk Committee, by the Women's Municipal League of Boston and the Boston Lying-In Service, recently by the New York Bureau of Child Hygiene, and by a number of other cities—Chicago, Buffalo, Baltimore, St. Louis, Milwaukee, etc.

It has been unquestionably shown that pre-natal care will prevent the development of a number of serious conditions likely to arise in the course of pregnancy, that it prevents many unnecessary maternal deaths, that it fits the patient better for labor, that it lessens invalidism, and, finally, that it has a tremendous bearing on the welfare of the infant. How are the masses to be reached? So far the work, while promising and excellent in character, has been of necessity limited in extent. The work needs to be greatly enlarged, not only in New York city, but in every city of the Union. In order to accomplish the most good, state and municipal authorities must be called on to take an active interest. The work must be free from political prejudice or animosity, and the methods must vary according to the community engaged therein. In the city I can see but one practical method of solution, and this method will have to be modified according to whether there are medical schools to fall back on.

The plan suggested for New York city is briefly this (and the same general scheme can be carried out in other cities in which medical schools are located): The Board of Health would, according to this scheme, redistrict the city in such a way that each section thereof would be provided with an obstetrical clinic, the size of the district depending on the number of possible patients. The system should be such that there would be no overlapping either on the part of the new clinics or on the part of those already existing as hospital clinics, milk center stations, etc. This would involve, I am well aware, marked readjustment in the districts of several of these agencies existing today in New York. Each clinic should be affiliated with a definite hospital—that is, with the hospital in said district already doing obstetrical work, or in the one chosen to take charge of maternity cases referred to it. This custom is already carried on to a certain extent here in the city, but as a rule patients from the milk station clinics have been referred to one of several maternity hospitals rather than to one in particular.

The readjustment will require great thought, much tact, and every effort should be made to avoid friction and not to deprive the already existing clinics of material they may have built up by long and patient endeavor, unless ample assistance and opportunity be given them in the new field.

These clinics should conduct the actual labors in addition to the directing of extensive pre-natal work. In case of serious abnormality at any stage of parturition, the cases should be referred to the nearest hospital available for obstetric patients. The patients, both adults and infants, should be followed after labor until complete recovery has taken place. This would be true, however, only of normal cases. Where further treatment of the baby is necessary, or where the mother needs operative treatment or gynecological care, she should be given a card for herself or her baby to some definite gynecological or pediatric service, with a brief record of their cases to date. It would be well if from such time on there could be some systematic record kept, which would be in a sense a continuation of the history started in the pre-natal clinic.

### STAFF

First—There should be one medical director, preferably a member of the Board of Health (either active or associate).

Second—There should be a medical chief assigned to each clinic.

Third—A resident nurse in each station. Further, sufficient nurses in each district to help with the work at the station itself, and assist the doctors in the homes of the patients. The assistant physicians to the clinics may be chosen from hospital staffs, medical schools, or from the physicians residing in any given district. These men would all work under the clinic chief in such a way that every station would have access to some competent, "willing" doctor, day or night. There is no doubt that in a number of the stations some of the neighborhood doctors would be glad to cooperate with the clinics and temporarily devote their services to the clinic for the sake of the additional knowledge to be derived from further experience in this field.

Fourth—A certain number of medical students should be attached to each station for as many weeks as possible,

such students being put on their honor to do conscientious work, and to help carry out the ideals fostered by those in charge.

Fifth—At present the educated midwife, under the close supervision of the district nurse, would prove of considerable value.

In cities without medical schools the same system is applicable, but it will present greater difficulties, inasmuch as there will be no student or faculty help to fall back on. The burden will rest entirely on the practitioner and nurse. Here, again, the midwife, when properly qualified, may be of considerable help.

This general plan will in the long run save money to the city, although the financing thereof at the outset will seem to offer many difficulties. Those not too poor to pay a small fee should do so. These fees should help defray the expenses of the individual clinics. Such a system would gradually extend its benefits to a large part of the poorer classes in the community; it would gradually and effectively eliminate the midwife; it would raise markedly the general average of obstetrical knowledge among the doctors who most need this experience; it would lessen maternal invalidism so commonly a result of poor obstetrical care; do away with a large amount of the evil results affecting the child as a result of immaturity or injury during labor. This would be a comprehensive plan for the guarding of infant life from the prenatal state through childhood to young adolescence. If carried out, it would offer a progressive, systematic scheme for the compilation of accurate statistics in this country. One more word in this connection: Each station might have on hand a list of doctors in the locality in which it is placed that are known to have had reasonable obstetrical experience, to whom patients able to afford to pay a moderate fee may be referred as private patients.

The American College of Surgeons has, as one of its fundamental aims, this very thing in mind—namely, the assistance it can afford the layman in case there is need of operative procedure. Why, in obstetrics, should the expectant mother, entirely ignorant of the medical status of individual physicians, not likewise be assisted in her choice?

In the country and small towns the problem is a different one. Here we are dealing with a great stretch of territory, with an often widely scattered population, with resources—in a measure at least—less accessible than in the city, with a lack of the assistance the city derives from the medical schools, with but scanty hospital facilities for those who cannot afford to pay for the confinement or who can afford but little. The obstetrical patient in the country is worse off, if possible, than her sister in the city. In case of any complications, the doctor is handicapped by distance, by lack of hospital facilities, by the difficulty in procuring helpful consultations. The patient, in turn, suffers seriously as the result of all this. The doctors—usually hardworking, honest, and earnest men—have a wide area to cover; their fees are small; they have but seldom efficient nursing. I think I am correct in saying that, despite the wonderful progressive spirit shown in certain scattered communities throughout the country, yet on the whole the spirit of "community interest," the sense of civic duty, is still quite lacking in a majority of our small cities, towns, and villages. (No offense intended.)

Our own state health authorities are endeavoring in all seriousness to solve some of the problems connected with the practice of obstetrics in the country. These endeavors, so far, have been perforce somewhat limited in extent. The district nurses are increasing in number and are performing magnificent work.

In the country, as in the city, there is needed a health center in some form for every community. This health center should be the forum for the various problems in the community that arise in regard to health, either of the individual or of the community at large. Here the antenatal clinic would be centered—here much important instruction could be given. To my mind such a center should reside in a small, well-equipped, well-managed hospital—a county hospital preferably. It should be controlled by a board, nonpartisan and progressive, composed of a small number of men and women from the community in question, and should be under the helpful supervision of an officer of the State Board of Health. "Politics" would ruin such a plan, whether during the development thereof or at any future time.

These hospitals should be located where they can most readily serve the greatest number. They cannot be built without some local taxation, although this need not be heavy. But this cannot be accomplished without a thorough arousing of the community. Let the churches forget their differences and come together, let all the various local agencies unite, let there be a general awakening, and the "hospital education idea" will grow. I cannot see in what manner our state health officers can adequately cope with the problem peculiar to the small towns or country districts unless this "county hospital" idea can spread, carrying with it, as it does, a wider extension of the blessings of the district nurse.

With the increase in the supply of district nurses, the midwife question in rural districts will likewise gradually be solved, although, as in the city, she may yet be developed into a safe and necessary adjunct to the nurses and the doctors in their care of the needy.

My tentative suggestions in regard to improvement in the care of the poor during the child-bearing period will, no doubt, arouse criticism. They are, in truth, merely suggestions. Perhaps the hardest problem of all is the financial one. Dr. E. E. Munger, of Iowa, should be mentioned in this connection, for he was the first, so far as I am aware, to seriously advocate this "county hospital" idea. Although a pioneer in this line, he yet has been able to overcome most of the obstacles, even against the greatest odds. Dr. Munger's efforts were followed in 1911 by Dr. H. O. Hyatt, of Kingston, North Carolina. A year later the Munger law was passed in North Carolina, with some modifications. This idea is being put into operation by the state health officer, Dr. Rankin. In 1913 the Texas Board of Health passed a law requiring county hospitals in counties which include cities of 10,000 or more, and permitting other counties to build them. In 1913 Representative J. W. Canahan, of Kansas, passed a bill through the Kansas Legislature very similar to the Munger bill, applying, however, only to counties of less than 40,000 population. The law has likewise passed in Indiana.

Thus the movement is growing. Every state in the Union should adopt some public hospital system that will offer care to all the needy, and not merely asylums for the tubercular, or the epileptic, or the insane.

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St. Anthony's Hospital at Oklahoma City, Okla., contemplates the early erection of a four-story addition. According to tentative plans, a medical research laboratory, to be devoted to the study of diseases peculiar to Oklahoma and the southwest, will be fitted up on the first floor. The second and third floors will contain accommodations for patients, and on the fourth floor will be located the diagnostic and surgical departments of the hospital. The laboratory will be in charge of Dr. A. Sophian, formerly of New York.

# INSTITUTION LIBRARIES

Conducted by E. KATHLEEN JONES,
*Librarian McLean Hospital, Waverly, Mass.; member Institutional Libraries Committee, American Library Association.*

Please address items of news and inquiries regarding Institution Libraries to the editor of this department, McLean Hospital, Waverly, Mass.

## Institution Libraries of Iowa

BY G. S. ROBINSON,
Late Chairman of the Board of Control of State Institutions of Iowa.

Even as early as 1906 the purchase and use of books and periodicals by the fourteen state institutions under the care of the Board of Control of State Institutions of Iowa had become a serious problem. At that time the institutions contained 8,000 inmates in charge of 1,400 officers and employees, and included four hospitals for the insane, one hospital for inebriates, an institution for feeble-minded children, a soldiers' home, a soldiers' orphans' home, school for the deaf, college for the blind, two penitentiaries, an industrial school for boys and one for girls.

The penitentiaries, having liberal library funds, had acquired large collections of books, one of the hospitals for the insane had a considerable number of high-class publications in fine bindings, many of them imported, but adapted to the use of advanced students and scholars rather than the ordinary reader or the insane. These books were in cases on the wards, but were seldom read. Other institutions also had books, and appropriations had been secured to make further additions to the libraries, but the board was not satisfied with the work done or results obtained, and felt the need of trained helpers in selecting reading matter and causing it to be circulated and read. State library officials gave valuable aid in selecting books, but lacked the intimate knowledge of the various classes of readers which was necessary to the most intelligent selections. Some of the institutions had officers capable of making desirable book lists, but none of them had anyone trained in library work, capable of classifying and cataloguing books, keeping proper records, and stimulating interest in the libraries.

The needs of the institutions varied according to their different classes of inmates and the differing needs of inmates of the same institution. Few of the institutions had anyone in service who possessed adequate knowledge of literature and also of the peculiar needs of the population to be served. The chaplains of the prisons had charge of the prison libraries and rendered valuable service as librarians, but they were not trained in the work and could give to it but little time. In none of the other institutions was there anyone who gave systematic attention to the libraries. Most of the libraries contained worthless books and some which were objectionable because bad. What time had been given to the libraries was of an irregular, spasmodic character, but little cataloguing was done, few records were kept, books desired were not easily found, and many were lost.

Attempts had been made to improve the service, but there were no funds to employ trained librarians to give all their time to the work, and recourse was had to detailing employees charged with other regular duties to give a part of their time to the libraries. But none of them had library training, few had much knowledge of books, their terms of service in the institutions were usually short, and the work was not carried on in a systematic and effective manner, and was of little value. Finally the board became satisfied that a new system should be adopted to secure the best obtainable results, and conferred with state librarians and others as to different plans. It finally adopted the system of employing a trained, experienced, and competent librarian to take charge in a supervisory way of all the institution libraries. As there was no state fund available for the payment of the salary and expenses of such an officer, the board could not appoint, but it was arranged that each institution should assume its proper share of the cost of the service based on the time the librarian should give to its library. Pursuant to this plan, a trained librarian was selected, who entered on the performance of her duties March 1, 1906. She proved to have unusual qualifications for the work, and entered on it with great enthusiasm. Her duties included the supervision of the libraries of the various institutions under the control of the board, the selection of books and periodicals in cooperation with the institution officers and the board, the classifying and cataloguing, the preparing of forms for records and reports, the instruction and training of local librarians, the stimulating of interest in employees and inmates in good literature, or rather in literature best suited to their needs, and the doing of whatever should be proper to increase the efficiency and usefulness of the libraries.

A system of monthly reports by the local librarians was instituted, the libraries were examined, objectionable books were withdrawn, books not adapted to the use of the institution where found were transferred to other institutions, damaged books were repaired, worn-out books were replaced, books were catalogued, finding lists were made, and so far as possible suitable rooms for the libraries and for reading were secured and furnished. New book lists were made out, and much attention was given to the needs of employees as well as inmates. Especial effort was made to stimulate interest in the libraries, and the circulation of books and magazines was greatly increased.

No means exist for comparing accurately the circulation before with that after the supervising librarian took charge, but it is known that the circulation was greatly increased during the first biennial period of her service. In the statistics made under her supervision no account is taken of newspapers taken and read by employees and inmates, nor of magazines and books circulated and read, but not issued by the librarian, nor of the different readers of books and magazines issued to a ward or cottage and read by more than one person before their return. As many employees and inmates have their own papers, books, and magazines, and many books and magazines are placed in wards and other places where they are read by many before they go back to the library, the number of readers and the quantities of literature read are much greater than the records show.

The first available statistics cover the eighteen months which ended June 30, 1908. They show that at the end of that period there were 50,640 volumes in the fourteen institution libraries; that the average monthly number of officers, employees, and inmates during the period was 9,580; that the average monthly number of readers was 2,776, the total circulation 200,151, and that 38 percent of

the circulation was of periodicals. Of the books circulated approximately 2 percent related to art, 2 percent to biography, 3 percent to essays and poetry, 3½ percent to history, ¾ of 1 percent to science, 3½ percent to travel, 8½ percent was of a miscellaneous character, and 75 percent was fiction.

In considering the circulation of books and the kinds read, the character of the inmate population should be considered. Of the total number of inmates at the end of the period—7,989—1,083 were in the institution for feebleminded children, which furnishes the smallest percentage of readers, 4,069 were in the hospitals for the insane, and a considerable number in the soldiers' orphans' home, too young to read.

In 1909 the supervising librarian retired to enter service elsewhere, and the vacancy was not filled for a considerable time. The second librarian rendered most effective and satisfactory service, but after a time she also resigned to accept a more tempting position, and the third librarian was appointed. The breaks in the continuity of work made by these changes were very prejudicial to the service. Nevertheless the impetus given to the work was so great that much was accomplished despite the changes. The last available report covers the biennial period which ended on June 30, 1914, and shows the following for the period:

The number of volumes in the libraries at the end of the period was 40,255, the average monthly population of officers, employees, and inmates was 10,816, the average monthly number of readers was 3,668, and the total circulation was 520,651, of which 48 percent was periodicals. Of the remainder there was a small increase in the percentage of biography, science, travel, and fiction, and a decrease in the percentage of essays, poetry, and miscellany. As compared with the period of eighteen months which ended June 30, 1908, there had been an increase of 13 percent in the average monthly population and an increase of 95 percent, making due allowance for the difference in length of periods, in circulation.

The increase of the percentage of readers in the hospitals for the insane is notable. In the period of eighteen months which ended June 30, 1908, the average monthly percentage of readers was less than 12, while during the biennial period which ended June 30, 1914, it was almost 25.

The use of books and magazines in hospitals for the insane not only furnishes entertainment, but is remedial. It "diverts the attention of the morbid mind from itself to something else." Many patients unable to read are interested in the pictures of the illustrated magazines and thus receive benefit. The superintendents of the hospitals are especially emphatic in their approval of the new library system. One of them who has had many years' experience as superintendent of hospitals for the insane in different states recently stated that never in his experience in hospital work had he seen anything like the progress in library development which was made in the institutions under the care of the supervising librarians. Miss Carey, the first of these librarians in this or any other state, in one of her excellent papers asks, "Where is a book always a tool?" and answers, "In state institutions." At another time she states that books are "tools to be used with intelligent expectation of getting results." Such use of books has been kept steadily in view in selections made under the new plan. The purpose has not been to accumulate a large number of books, but rather those most useful. During the six years which ended June 30, 1914, the yearly average of accessions was 2,450 volumes, but the number worn out, destroyed, and otherwise withdrawn exceeded that number, and the total number in all the libraries had fallen during the six years from 50,640 to 40,255.

Iowa was the pioneer in the work described, but the experiment is fully justified by the results achieved. It is heartily approved by the officers in charge of the institutions affected by it. No doubt it can be improved. The experience of the state, however, warrants the following conclusions:

1. Well-selected libraries can be made most potent factors in accomplishing the special work for which the institutions are established.

2. Such libraries cannot be carried on successfully by untrained librarians without expert supervision and assistance.

3. It is desirable that each library be in charge of a well-trained and competent librarian of experience, who shall give so much time as is possible to the library and be paid from the institution funds.

4. The institution librarians should be supervised, and, when not experts, should be trained, and in all cases assisted by a state librarian of superior training, experience, and qualification for the work.

5. The supervising librarian should be paid by the state. The system of pro-rata payments by the institutions served involves the keeping of complicated accounts, and is very unsatisfactory.

6. Each institution should have one or more rooms for the accommodation of the library and conveniently located, well-lighted reading rooms, open at all proper times, for the use of employees and so many of the inmates as may be in condition to use them.

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**Norfolk State Hospital, Pondville, Mass.**

Dr. Irwin H. Neff, superintendent of this hospital, has been kind enough to send us a copy of the first annual report of the library, which is an exceedingly stimulating document.

This hospital, for the care and treatment of male inebriates and drug habitues, has been in existence as an independent institution only since June, 1914; for three years previously it was conducted as a colony of the Foxborough State Hospital, with which it now has completely severed its connection, leaving at Foxborough only the insane.

The library at Foxborough, before the separation, was one of the most interesting of all the Massachusetts state hospitals, for it was housed in a building by itself, in which were open fireplaces, and where the men were allowed to smoke, thus making of it a recreation and reading room combined. The books, of which there were many, were carefully selected by Dr. Neff himself, and they were thoroughly used and enjoyed.

At the new hospital are two library centers, the "main library" at "The Oval" and the "branch library" at Pondville, both under the care of a librarian, Mr. Frank C. Lockwood. In this, his first report, Mr. Lockwood states that on November 30, 1914, there were in the library 278 books; on November 30, 1915, these had increased to 883 volumes, of which 105 are nonfiction. Starting with this nucleus of 105 volumes, Mr. Lockwood is very wisely classifying them, knowing that the library will grow and believing in organization at the start; 3,863 books were loaned to patients during the last nine months, and the reference books frequently consulted. Four weekly and sixteen monthly periodicals are subscribed to, besides eight daily papers.

Moreover, this library is establishing itself as "a bureau of the generally useful sort," striving to supply in

small ways the wants of the men. Copies of poems and music have been made, and items of information relating to authors and prominent persons have been listed. As Dr. Neff says, they are "slowly but surely founding a library at this hospital on definite lines."

### From the McLean Hospital Library Annual Report for 1915

The general library now numbers 8,294 volumes, a gain of 301 volumes in the past year. Of these, 114 are fiction and 66 books on art and handicrafts, bought from a bequest; the other 121 deal, for the most part, with travel, biography, and the war; 9,020 books were loaned to patients and employees, 85 being the largest number given out in any one day. There have been fewer books taken out by individual patients, but more by the head nurses for their wards, than ever before. We have tried a plan this year of filling some bookcases in three of the houses with books not in constant demand in the library, and leaving them for two or three months. Of course new books are sent to these houses in the meantime, but in this way there is always a good supply on hand for an emergency, and the plan has seemed very successful.

In the medical library we have added 187 volumes, of which 137 are bound periodicals. This library now numbers 5,832 volumes.

There were practically no new books issued in December, and therefore the book reviews are omitted. It may be helpful to some hospitals to suggest that January and February are the best months to frequent the book shops and pick up "bargains" and "remainders." Provided one knows what he wants, he can also find the best fiction of the preceding year at greatly reduced prices, but it must be remembered that all fiction that is for sale is not for a hospital library, where one should be especially particular in his selection of wholesome reading.

Next month we are promised an outline of the things Nebraska is accomplishing for its institutions in the way of libraries.

### Pennsylvania Hospital for the Insane

Dr. Copp, in his report for 1914-15 of the Pennsylvania Hospital for the Insane, writes: "Provision for the maintenance of a good library and librarian would have the same trend (as handicrafts) in lowering the cost of treatment, and would stimulate a taste for good literature among patients and nurses, sure to be an uplifting and refining influence." Miss Mary Lee Daniels has been appointed musician and librarian in the women's department of this hospital, and is engaged in classifying and cataloguing the library which has just been started here. A pleasant room in the administration house has been fitted up for a central library, and the staff is much interested in the success of this new venture.

### Institution Libraries League

Ten years ago, with the exception of a scant half-dozen hospitals with more money or interest than the others, the average institution library was a place to be shunned. It consisted of a few old bound magazines, a little fiction of the Sunday-school order, a lot of old biographies from attics more generous than discriminating, shoved into bookcases on some of the wards. No one was interested in this collection, no one added new books to it, no one read it. That in these ten years this state of things has materially changed is due to the efforts of the very few hospitals which, having good libraries, realized their value and sought by precept and example to interest their less fortunate kin, and to one state in the Union, which saw the needs of its institutions as a whole and promptly devised means to bring order out of chaos, interest out of utter dullness, efficiency out of absolute inertia.

As Iowa bears the proud distinction of being the pioneer state in the development of its institution libraries, it is altogether fitting that the series of brief biographies of hospital libraries which is now in preparation for this page should be headed by this article from Judge Robinson, who was chairman of the Board of Control in Iowa at the time of which he writes, when that state blazed the trail leading to organized institution libraries instead of heterogeneous collections of dead books.

### Health Books in Public Libraries

At the suggestion of the Bureau of Public Health Education of the Department of Health, the New York Public Library has prepared and printed an eight-page booklet giving a list of books on "Health," which are available for use through the branches of the New York Public Library. This list is based on a similar one issued recently by the Public Library of Rochester, New York, and distributed at the recent annual meeting of the American Public Health Association. Through the courtesy of the New York Public Library, a supply of these leaflets has been furnished to the Department of Health, which, in turn, is sending them on request, especially to the biology teachers in the various high schools in this city. Copy of this leaflet may be obtained by addressing the Bureau of Public Health Education, Department of Health, 139 Center street.

It is to be hoped that libraries elsewhere will find it possible to list the more important health books separately, so that teachers and students may have ready access to them in groups.

### More County Tuberculosis Hospitals for New York State

The following table, published in a recent issue of *Health News* of the New York State Department of Health, gives the result of the November referendum elections in five counties on the question of establishing county tuberculosis hospitals:

| County | 1915 census population | Amount voted on | Yes | No | Majority |
|---|---|---|---|---|---|
| Rockland | 47,623 | $ 50,000 | 5,756 | 2,721 | 3,035 |
| Herkimer | 51,101 | 25,000 | 4,232[1] | 2,434 | 1,798 |
| Jefferson | 81,861 | 25,000[2] | 10,641 | 5,430 | 5,211 |
| Steuben | 83,696 | 30,000 | 10,064 | 7,490 | 2,574 |
| Niagara | 107,553 | 100,000 | 12,174 | 4,203 | 7,971 |

[1]Several election districts missing in this report.
[2]In addition to $15,000 already appropriated.

The above amounts thus appropriated make it incumbent on the supervisors to proceed to select a site, construct a hospital, and appoint a board of managers under the county hospital law.

### Budget for New York State Hospitals

Governor Whitman, at a recent conference on the budget for the New York state hospitals, approved requests for $1,042,493 to be used along lines of new construction and permanent betterment work at the various hospitals. A plan was suggested to defray part of the cost of construction and equipment of a new hospital by utilizing the $300,000 unexpended balance of the appropriation for the Mohansic Hospital. This hospital, preferably to be erected on the grounds of the Middletown State Hospital, by an additional state appropriation of $700,000, could house sufficient patients to nearly do away with present overcrowding.

# DISPENSARY AND OUT-PATIENT WORK

Conducted by MICHAEL M. DAVIS, Jr.,
*Director of the Boston Dispensary.*

Please address items of news and inquiries regarding Dispensary and Out-Patient Work to the editor of this department, 25 Bennett street, Boston, Mass.

## The Dispensary's Place in Sickness Insurance

The fact that a bill to provide for a state system of insurance against sickness is to be introduced in 1916 into the legislatures of New York, Massachusetts, Missouri, and probably of other states lends interest to the relationship of sickness insurance to hospitals and dispensaries. A year ago Dr. S. S. Goldwater said:

"Now that this country is moving toward sickness insurance, I hope that we shall be foresighted enough to utilize, in whatever plan we may adopt, the available resources of our existing medical institutions, both hospitals and dispensaries; without this, we cannot provide medical service of the best kind."

At the meeting of the American Association for Labor Legislation at Washington during the Christmas holidays this subject was considerably discussed. Dr. B. S. Warren, one of the surgeons in the United States Public Health Service, has stated the need for sickness insurance in a recent article published in the *Journal of the American Medical Association* (December 11, 1915):

"There are approximately 30,000,000 wage earners in the United States. Each one of these loses an average of about nine days per year on account of sickness. This estimate is based on an investigation made for the United States Commission on Industrial Relations of about 1,000,000 industrial workers in the United States, and nearly coincides with the German and English figures for over 26,000,000 insured wage earners, which show an average of eight to nine days of sickness per year. Estimating the daily wage at $2 and the cost of medical services at $1 per day, the annual loss would amount to over $800,000,000. This leaves out of consideration the human suffering and losses due to death and decrease in efficiency which follows illness. It also leaves out of consideration the effect on the family when the breadwinner is disabled.

"When the losses due to sickness come to the families living just above the poverty level, this circumstance causes them to fall below that level. These are the conditions which have compelled the partnership between poverty and disease. There is no need to tell physicians that sickness increases as the income decreases; that the mortality rate in the poorest sections of a city is often double that of the best sections; that the infant mortality in the families in which the father earns less than $10 per week is three times that in the families in which the father earns $1,200 or more per year, and that the tuberculosis rate is roughly in inverse ratio to the income.

"There is no question in the mind of the experienced physician that at times poverty is caused by disease, and at times disease is caused by poverty, and that this vicious circle must be broken before disease prevention can make much headway among this group of people.

"The conclusion is apparent, therefore, that the largest share of the responsibility for the wage earner's health rests on the workers who cannot carry the load. Society expects these to carry the greatest part of the burden of sickness, when under the best conditions they can barely meet expenses, and, furthermore, they have the least experience in disease prevention."

Dr. Warren, who has given a great deal of attention to this matter under the direction of the United States Public Health Service, outlines the system of sickness insurance which he believes would go far toward meeting this situation. This is based on a system of contributions paid partly by employers, partly by employees, and a small remaining portion is paid by the state. The contributions are devoted to the provision of medical service for the wage earner and his family during sickness and to the payment of a small cash benefit during the period of incapacity due to illness.

How shall the medical service be provided? While, of course, the individual practitioner will be the mainstay of the system at large, it is of the greatest importance that provisions for utilizing the hospitals and dispensaries shall be made. The insurance payments will enable the hospitals and dispensaries to give the best medical service —the service of specialists, laboratory, x-ray, etc.—to persons who are otherwise quite unable to pay for such benefits of medical science. The workmen's compensation laws have already affected hospital work considerably and in many communities the dispensaries. Sickness insurance will be much more far-reaching, and will be the means of having a large amount of needed work, which cannot be done today because the hospitals and dispensaries cannot afford to do it, performed on a basis which enables the workman to feel that he is not receiving charity, and which enables the medical institution to know that it will receive at least the cost of the service and not be increasing its debt by serving the patients.

## A Consultation Clinic

A step of greatest interest and importance to all concerned with out-patient work has been taken by the Massachusetts General Hospital, of Boston, which opens a consultation clinic on January 25, 1916. This clinic will be for the purpose of providing consultation—medical, surgical, or in any specialty—for persons of moderate means. The official announcement issued by the hospital, reads as follows:

"Every Tuesday and Friday at 2 p. m. patients referred by their physicians will be received at the out-patient department on Fruit street for consultation and diagnosis only. These are hours apart from those of the regular out-patient clinic.

"Physicians are requested, if possible, to accompany their patients. When a physician is unable to accompany his patient, he will be expected to send a letter referring him to the hospital. This letter will be answered, and as far as possible the diagnosis given and treatment suggested.

"The clinic is designed for the benefit of families with small incomes. Diagnosis has become so complex and expensive in obscure and difficult cases that its cost has become a heavy burden to those who nevertheless are able and willing to pay something. It is expected that physicians will not refer to it people of considerable means.

"A fee of $5 will be charged. When an x-ray examination is needed, a fee of $2 to $3 will be charged in addition. For certain other laboratory tests charges not to exceed $1 will be made. The $5 admission fee includes more than one visit when these are necessary for a diagnosis."

Dr. Karl H. Van Norman, who quit his position as assistant superintendent at the Johns Hopkins Hospital in October to become a captain in the Royal Canadian Army Medical Corps, is stationed at Ramsgate, England, where he has supervision over 125 patients in an important British military hospital. Ramsgate is within ten miles of Dover and within hearing of cannonading in Flanders.

# THE MODERN SANATORIUM

Conducted by ALBERT WARREN FERRIS, A.M., M.D.,
*Superintending Director for the Commissioners of the State Reservation, Saratoga Springs, New York.*

Please address items of news and inquiries regarding The Modern Sanatorium to the editor of this department, Saratoga Springs, New York.

## The Sanatorium Physician

BY ALBERT WARREN FERRIS, A. M., M. D.

Many years ago the family physician was the only court of resort. He was the sure guide, profound philosopher, and cherished friend of the family, as well as the only source of medical wisdom. An ideal relation existed between him and his patients. He was chosen as counselor and friend by a young couple at the time of their marriage, and he officiated as obstetrician, moderate gynecologist, general internist, and near-neurologist. His laboratory work was confined to elementary urine analysis, and the only specialists he knew were operative surgeons and the practitioners who limited their activities to the combination field of "diseases of the eye, ear, nose, and throat."

His diagnoses of putrid sore throat, inflammation of the bowels, or heart failure were readily accepted on death certificates. His ideas of the proper place in a room for the hot air register or of the right color of the proposed wallpaper decided those weighty matters to the complete satisfaction of his clients. In short, he was trusted, respected, admired, and loved by his community, and the confidence he inspired on entering a sick chamber was of great value to the patient.

It seemed once that an ideal theory and method consisted of the selection by a family of a general practitioner who should be chosen for life, or until he retired from practice; who should make the fullest possible fruitful inquiry into the inheritance and antecedent history; who should study the tendencies as well as the transmitted susceptibilities, and also the cross strains admitted through marriages; who should make, in addition, psychological studies of mental adaptabilities and capacities; to the end that he should not only advise as to the avoidance of disease and treat actual diseases on their appearance, but also act as a guide in sports and physical development, in courses of study, and in choice of a vocation in life, as well as regarding the marriageable age of the individual daughters in the household and their preparation for the formerly popular profession of motherhood. On his death or retirement from practice his histories and case notes were transmitted to the man who succeeded him as physician to this family, or to the next generation thereof.

This scheme would be admirable if it were possible in more than a very few communities, as in a sessile population. A physician with a broad, trained mind and an exceptional medical preparation would be invaluable and ideal in the relations just described; but doubtless such a real "family physician" was an extreme rarity.

With the expansion of medical knowledge and the better comprehension of disease, with the tremendous growth of preventive medicine, the general practitioner became less valuable and entirely inadequate. It is a trite saying that one man cannot do everything. As specialism grew, an inevitable and welcome result of the increase of technical medical knowledge, families began to ask for separatists and individualists in practice, and by degrees the general family practitioner disappeared. The head of the family, with several specialists in mind, came to think and to ask, when sickness appeared, "whom shall I call in?"

For many years in urban and suburban communities the medical specialist has been summoned precisely as would be an efficiency engineering expert, to examine the conditions, point out the deficiencies, and suggest the remedy. The internist favored by the family may be put in charge of the case to follow the specialist's directions and to assist in the convalescence, after the bright effulgence of the oracle had faded, on his departure. Thus the group system has grown. The internist is one of a group of physicians including aurist, oculist, neurologist, etc., one or other of whom must be summoned from time to time. The head of the family must reckon on being surrounded by six or seven specialists instead of relying on the "family doctor," as in the good old time. The specialist may be called but once; he may operate, or the case may pass into his hands entirely. But in few instances can his grasp of family conditions be comprehensive, rarely can his interest be deep, very seldom can he stand in the valuable relation of the former "family doctor."

Many of our specialists are of the utmost value. Their keen insight and diagnostic skill cause the initiation of measures that save life; but many of them lack the human touch and the human sympathy, and very naturally their connection with the case is often merely technical and ephemeral. A few have secured most of their medical knowledge at the autopsy table. After these have cleverly solved the diagnostic problem, and have formed such a clear conception of conditions as to be able to draw the lesion on the blackboard with colored chalks, their interest ceases.

Talented physicians with such an attitude toward sick people will not alone make a success of sanatorium work. The semi-invalids or invalids who seek help, as well as those who apply for preventive care, will not be satisfied with an impersonal examination and disposition of their cases, as if of so much material. If dissatisfied and not at ease, they will not progress very rapidly toward good health. They need the relations of the old-style physician, who never loses sight of the person in the case.

Perhaps the point is best illustrated by adducing examples. A patient entered a sanatorium some 2,500 miles from home, leaving husband and children behind, courageous, but somewhat sad and lonely. Fortunately, she fell into the hands of the best physician, technically, on the staff of the sanatorium, whose treatment was scientific and skillful, and under whose care she improved. She wrote, however, to an acquaintance, "I am sure Dr. A. B. is an excellent physician, but I miss the personal touch." Later she wrote, "I stayed my allotted time, under the good, but very impersonal, care of Dr. A. B., and I don't think he regretted my going, as I could not take him as seriously as he takes himself. I rather teased him by telling him not to express his great regret at my going—this after a most conventional goodby—that I could not bear it, and I could almost see the joy in his eye as I finally turned my back and left him in peace."

Another patient went to a sanatorium with great reluctance, accompanied by a relative, and was depressed and dispirited, distrait and unhappy during the five or six weeks of her stay. She made fair progress and strove

to interest herself in the condition of her relative, who was by far the more ill of the two. On reaching home, however, this uninterested and apparently unappreciative patient wrote to the physician who cared for her while at the sanatorium as follows: "I truly want to thank you for all your thoughtfulness and care of my cousin and myself while we were at the sanatorium. You did everything in your power to make us enjoy our stay, and I can truthfully say that I hope some day to visit it again. . . . I thank you a thousand times, Dr. X. Y., for all." Such testimony shows that in successful sanatorium work the physician must remember he is more than a mere technician, an expert mechanician. On the staff must needs be pure technicians and mechanicians; but the one in charge of the case, the one holding the most intimate relations with the patient, must be a doctor with great patience and devotion, broad tolerance, kindly sympathy, and a warm human feeling; an optimist with an abiding zest in existence himself, and with a constant desire to help, sustain, and cheer.

## A HOSPITAL IN THE DUTCH WEST INDIES

### Two Sleepy Islands in the Caribbean Seem to Have Been Forgotten by Civilization

Half a day's sail from the verdant gardens of northern Venezuela lie the island of Curacao and its sister isle Aruba, where the restless Caribbean shatters its glistening breakers against the coral strands. There is always a high sea, for there is always a wind. The constant trade winds sweep from sea to shore, across the barren wastes, and off again over the dancing waves. Their moisture-laden breath, warm and oppressive, seldom lingers to freshen the parched, scrubby growths. The poor, sparse little bushes, tough cacti, and rank grasses fight courageously for life, and linger patiently through the torrid mid-day sun for the sweet refreshment of the starlit dews.

Water, always water! is the cry of the hour, and this necessary commodity in this little out-of-the-way place is an item always open to speculation.

A porta de aqua consists of a fifty-gallon barrel suspended between two large wheels and drawn by a very sleepy, dusty little burro. The driver shouts his wares as we do ours in American cities. Now and again the outfit stops; the burro closes his eyes, while his master fills a five-gallon can, for which he receives two cents. Occasionally a real drought occurs, and only recently this calamity was unusually severe, when only twelve inches of rain fell in the course of a year and a half, being about one-twelfth of that experienced at Havana. The death rate doubled on the island of Curacao, and half of the burros died of thirst. Aruba, with a population of about 9,000, is just recovering from a very severe drought.

In the midst of our efforts to increase hospital efficiency at home, to surround ourselves with every comfort which ingenuity can suggest, may we not look with helpfulness to the hospital facilities which obtain at Aruba, so near us and so entirely dependent on us. The solitary physician to these 9,000 writes as follows:

"On account of five years with almost no rain, no crops, and with brackish drinking water, the physical condition of the people is very bad indeed, and it is a wonder that they do not die of starvation. A fat person is a rare sight. Most all of the people outside of the town have scurvy to a greater or less degree, which also makes them more liable to other diseases, especially typhoid fever, diarrhea, and dysentery. Besides the diseases of the place itself, many men who have gone to Venezuela and Colombia for work have returned with malaria.

"The government has a house where the people who are in the worst stages of starvation can go, and where thirteen people are allowed 12 cents a day for food. This

Fig. 2. Filling the water wagon, the most important business in the Dutch West Indies.

house is not even called a hospital by the government—and, in fact, is none—because they have no nurses and nobody to look after the sick people. If anybody is very sick, one of the family goes with him and takes care of him; if the sick one has no relatives, then he does without care. The following is an example: a month or so ago there was in the hospital an old man with tuberculosis and ulcers. After a while he became bed-ridden and offensive, so that he was removed to a smaller house nearby, where his food was sent to him during the day, but at night he was left alone to shift for himself. An effort was made to get someone to nurse him, and three juilders ($1.20) a day was offered, but nobody could be found. One morning he was found lying more than half naked in the street, where he had crawled in his last agony."

This little glimpse of a strange, out-of-the-way place is so completely free from fiction, that it becomes positively painful when we consider it in detail. Incidentally it brings us back to the individual for whom hospitals, after all is said and done, really exist. System, efficiency, economy have become so essential and so absorbing, that we sometimes forget the real reason for it all and make of our patients a cog in the gigantic machine instead of its moving force.

PALUEL J. FLAGG, M. D.,
120 Central Park, South, New York.

Fig. 1. Harbor at Curacao, looking west over the Caribbean sea. Nine thousand people without a hospital.

# SOCIAL HYGIENE
## VENEREAL DISEASES

Conducted by WILLIAM F. SNOW, M. D.,
*General Secretary, The American Social Hygiene Association.*

Please address items of news and inquiries regarding Social Hygiene to the editor of this department, 105 West Fortieth street, New York City.

### The Hospital and the Venereal Diseases[1]

Two of the conclusions which insistently claim attention as a result of recent investigations of genitourinary and gynecological services in hospitals and dispensaries are the need for improving and standardizing the management of venereal disease patients and for adequately extending such services.

An investigation now being conducted in New York city by the Committee on Public Health of the Academy of Medicine, cooperating with the Bureau of Public Health and Hygiene of the Association for the Improvement of the Condition of the Poor, shows that of thirty general hospitals only ten receive recognized cases of syphilis in actively infectious stages; but, once admitted on some other diagnosis, twenty-seven give care and treatment, although only seventeen provide the services of a syphilologist. Nine receive adult cases of gonorrheal infection needing hospital treatment, and two of this number specify, "only surgical cases are accepted." Three city hospitals receive and treat active gonorrhea in little girls. Thirteen of the thirty will not receive medical cases with known complications of syphilis or gonorrhea.

Yet with these limitations, during the past year 2,607 syphilis cases were treated according to the reports of only fifteen of these hospitals. When it is realized that careful investigations, based on a constantly increasing number of individuals representing every class of citizen and all types of occupation, show evidences of syphilis in 8 percent up to 25 percent, and in certain groups 40 percent (exclusive of prostitutes, which have shown a percentage of nearly 100 percent, one may well ask the question, what becomes of those who do not receive any hospital care? Hospital managements should take an active interest in the public health phases of this tremendous problem. Many believe that the management of venereal disease cases is essentially a dispensary problem. While it is true that the hospital adds chiefly a bed and the more complete supervision through discipline and organized professional nursing staffs, it is also true that these additions in certain manifestations of syphilis or gonococcus infection make all the difference between success and failure. Many experienced physicians believe that the intravenous administration of such remedies as salvarsan (the treatment for syphilis frequently referred to as "606"), when performed outside the hospital, is attended with serious risk to the patient. Furthermore, such treatment, under the adequate supervision possible in the hospital, is most likely to inhibit the transmissibility of the disease for a considerable period, or even to end its development in early cases. The treatment of many cases of gonococcus infection is surgical, and hospital care, therefore, imperative; but there are others frequently denied admission whose prompt recovery and return to normal living and occupation without danger to family or fellow-workmen would be greatly increased by those services which can be rendered only under hospital conditions.

Furthermore, the active participation of hospitals in the campaign against venereal diseases is rendered the more urgent because in a large percentage of cases the hospital management also governs the dispensary facilities offered for venereal diseases. As previously pointed out in this column, New York investigations made by Dr. Barringer and Mr. Platt show that only seven out of twenty-seven clinics offering treatment for syphilis meet the requirements of the Associated Out-Patient Clinics, and only four out of twenty-six clinics offering treatment for other venereal diseases meet these standards. The records of only two clinics could be profitably analyzed, and these show less than 10 percent (9.7 percent and 9.4 percent, respectively) dismissed as cured. Figures published by Dr. Davis, of the Boston Dispensary, similarly show only 11.4 percent of 450 patients dismissed as cured, and the figures of Dr. Sanford, of the Lakeside Dispensary in Cleveland, give as cured only 12 percent of the series studied. In the later series of investigations, five hospitals were found to require before the discharge of a syphilis patient three tests, technically designated as (1) healed lesions, (2) entire disappearance of symptoms, (3) one negative Wassermann; but thirteen hospitals similarly studied require none of these. One hospital requires for discharge a gonorrhea patient two tests, technically known as (1) negative complement fixation, (2) negative prostatic massage (for men) or negative cervical smear (for women); but fifteen hospitals require neither of these. Ten hospitals refer discharged cases to social service departments for some form of follow-up observation, but such follow-up work with venereal diseases is usually very incomplete.

Fig. 1. Waiting room.

What this means to the public can perhaps be paralleled by the spectacular outbreak of smallpox which occurred in Montreal in 1887, when the panic-stricken inmates of a hospital, after exposure to an unrecognized case, were permitted by the authorities to scatter through the city, with

[1]The obliteration of patients' features in the pictures shown in this article is a good illustration of the care that is taken to secure privacy in this part of the department's work.

the result that several thousand persons developed the disease and many died. Outbreaks of venereal diseases are not spectacular or sudden, nor do the causal organisms find ready opportunity to attack new victims except through the intimate relations of sexual intercourse, but their insidious spread, aided by the prolonged periods of years during which infected individuals may be carriers, makes them far more dangerous than smallpox. In the development of adequate medical and social treatment of

Fig. 2. Wassermann laboratory.

venereal patients we have presented to health departments a concrete problem for which solution is demanded by every interest—economic, social, and moral.

The need and the practicability of providing diagnostic, advisory, and treatment facilities for ambulatory cases (i. e., those patients who may come to the physician's office or dispensary for treatment) have been fully demonstrated by the private, pay-clinic, and free-clinic treatment services established.

The photographs here reproduced show the New York Health Department's advisory and laboratory services in operation. During the past year more than 3,000 persons applied for advice, 316 of whom came during the first six months as a result of a small paid advertisement inserted in the newspapers announcing free confidential advice by the health department. During this same period 59,614 specimens were examined for evidence of syphilis or gonococcus infections, 75 percent of which specimens were received from private physicians. In the past four years more than 5,000 interviews and letters relating to sex matters or venereal diseases have been provided for by the Oregon State Board of Health in cooperation with the Oregon Social Hygiene Society. There has already been published in this column similar illustrations of treatment facilities through free and pay clinics, as demonstrated by pioneer work such as that of the Boston Dispensary, the Brooklyn Hospital, and other institutions.

Dr. Edward L. Keyes, Jr., in a recent paper before the Pan-American Congress in Washington, says:

"The part played by the clinic and the hospital in the treatment of venereal disease is also being developed. In the past the following curious contradictory situation has existed in many of the cities of the United States: the regulations of most of the hospitals prohibited the admission of infectious diseases, including therein the venereal diseases. Thus all men were effectively excluded. But, inasmuch as the internal complications of gonorrhea in women, such as pyosalpinx, formed a large part of the operative material of the gynecologist, no one ever thought of prohibiting the admission of such cases to any hospital. In many instances, indeed, the women themselves were unaware that they were suffering from a venereal disease. A broader knowledge of the infectiousness of venereal disease is, however, changing the hospital's point of view. It is recognized, for instance, that the syphilitic, however disfigured by eruption, is no more of a danger to attendants and other patients in a hospital than is a patient suffering from tuberculosis or typhoid fever. On the other hand, the absolutely uncontrollable contagiousness of gonorrhea in little girls under hospital and institution conditions has led to a rigorous quarantine against this disease in all children's institutions, whether for the well or the sick.

"Out-patient clinics may be stimulated to do efficient work in two ways: first, by the cooperation of the Board of Health in sending patients from its advisory clinic for treatment only to those clinics that live up to a recognized standard of excellence; second, by a federation similar to the Associated Out-Patient Clinics, conducted under the auspices of the New York Academy of Medicine, whereby the chiefs of clinics assemble and enact regulations for the

Fig. 3. Medical adviser's office.

conduct of the institutions that they represent. The fundamental requirements for clinic efficiency are laboratory diagnosis (spirocheta, gonococcus, and blood examinations), the control of cures by blood examination, and, above all, the control of patients by a social service. This last item includes not only the posting of a letter to patients who fail to return for the continuation of treatment, but, furthermore, if they neglect to respond to a letter, it includes the sending of a social service worker to visit them at their homes and inquire why they do not pursue treatment.

"One would suppose that the life of such a social worker would be beset with violence and strife, yet, curiously enough, a little tact seems to solve all difficulties. Just as the Board of Health has found that if a Wassermann test is positive in a married man, he can very readily be persuaded to bring his wife and children for examination, so the social worker finds that, not only can he persuade the careless patient to return for further treatment, but he can also obtain access to the family of this patient and inform them directly of the dangers to them."

The hospital managements are in the position to greatly accelerate the progress of obtaining adequate recognition of the importance to public health of diagnosing and treating venereal disease.

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The Seafuse Hospital, Elmira, N. Y., owned and formerly conducted by Dr. Samuel M. Seafuse, has been leased to Miss Eva M. Paradise, superintendent of nurses at the Westside Hospital, Scranton, Pa. Dr. Seafuse has been compelled to give up active management of the hospital, owing to an attack of arthritis of the ankle, from which he has been suffering for some time.

# LETTERS FROM OUR FIELD EDITORS

## News Notes From California

### PUBLIC HEALTH VALUE OF THE GREAT FAIR

The Panama-Pacific International Exposition on December 4 closed its doors on what was undoubtedly, in some directions, the greatest educational exhibit along medical and hospital lines ever attempted. Many of those who visited San Francisco at the time of our convention and availed themselves of the opportunity to go through the different buildings must have appreciated the many valuable exhibits of interest to hospital people.

Of these exhibits one particularly worthy of interest was the exhibit of the Public Health Service in the Liberal Arts Building, which showed, by means of graphic illustrations, sewage contamination, carrying of infection by flies, life history of mosquitoes, and of the uncinaria and ankylostomum, all of which were presented graphically in a very simple manner. The methods of constructing ratproof houses, and other aids of great value in disease prevention, were also exhibited.

In the Liberal Arts Building were portrayed the complete workings of the Red Cross organization, shown by means of moving pictures, such as methods of resuscitation in cases of drowning and asphyxiation, as well as all the appliances and methods used in first aid.

In the Educational Building the United States government sent Dr. Bradley to take charge of the department of children's welfare. Through the efforts of various hospitals in San Francisco nurses were loaned to Dr. Bradley, and demonstrations were made to all those who requested them on the proper feeding and care of infants and children. This exhibit was very largely patronized, and I am convinced has resulted in great good.

Also in the Educational Building the state of Pennsylvania has a large exhibit of its health work, particularly illustrating its care of tuberculosis patients. The largest hospital models shown were included in this exhibit, which also contained models constructed of the same material as the original of the Curative cottage and a Sleeping cottage for the care of tuberculosis cases.

The county of Los Angeles, Cal., also had a model of its new tuberculosis hospital in this building.

The government of Japan had a wonderful pathological exhibit, as well as one of the finest institution models at the Fair, that of the Imperial Institute at Tokio, which has been given to the University of California. They also had some very fine interior photographs of Japanese hospitals, showing patients lying in bed with their faces toward the window, and also an overhanging metal bar with a chain and handle attached, by means of which a patient might with his hands raise himself up in bed.

The Rockefeller Institute of New York had a most interesting exhibit of hookworm, showing many cases of secondary anemia due to this condition, and also the initial lesion commonly known as ground itch.

In the Massachusetts section of the Educational Building were beautiful models of a typical ward of the Peter Bent Brigham Hospital in Boston, as well as the unique construction of the Children's Orthopedic Hospital in Boston.

The New York city building had models and pictures of the old and new Bellevue Hospital, as well as many photographs of the civic hospital development in New York city.

In another building were isometrical drawings of the service building of the Rhode Island State Hospital and a large drawing of the new University of California Hospital.

The emergency hospital conducted by the Fair officials contained eight beds, an operating room, an x-ray department, a small laboratory, quarters for nurses, and administrative quarters. The emergency hospital was in charge of the United States Public Health Service. This hospital also had two very thoroughly equipped automobile ambulances.

Scattered through the various buildings were many exhibits of varied character of great interest to institutional, sociological, and health workers. The entire Exposition, from the standpoint of health and disease, has made manifest the decided advantages of graphic exhibits in our fight for good hygiene, sanitation, and prophylaxis, and such exhibits could be installed, particularly in tuberculosis dispensaries and public places at a very small cost and with very great advantage.

### SAFETY VAPORIZER

As a result of numerous fires which have had their origin from alcohol and other kinds of lamps used in connection with vaporizers, I have recommended to an electrical concern the manufacturing of a vaporizer with an electric unit, constructed in such a way that it renders danger from fire impossible, except from the danger of short circuits common to all electric wiring. This can, however, in a way be minimized by careful construction and frequent inspection. This recommendation is made only after recognizing the extreme danger as a fire risk of the common type of vaporizers.

### ACCEPTED NEW POSITION

Miss Lena F. Richardson, of Nevada City, Cal., has accepted a position with the New Juneau General Hospital at Juneau, Alaska.

R. T. SUMMERSGILL.

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## Division of Fees in Oklahoma Hospitals

The following declaration has been approved by the hospital management and signed by staff members of Wesley and St. Anthony's hospitals, Oklahoma City:

"I hereby promise on my honor as a gentleman that I will not, so long as I am doing work in connection with the University Hospital, practice division of fees in any form, either by collecting fees for others referring patients to me, or by permitting them to collect fees for me; nor will I make joint fees with physicians or surgeons referring patients to me for operation or consultation; neither will I in any way, directly or indirectly, compensate anyone referring patients to me; nor will I utilize any man as an assistant as a subterfuge for this purpose.

"I further agree that, in case of violation of the above declaration, my connection with the faculty and my privileges in the hospital shall be automatically severed."

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Dr. Jacques Behtillon, director of medical statistics of the French army, in a special report which he has prepared, states that the mortality among the sick and wounded in hospitals is now only 18 to 1,000. During the first year the mortality ratio was 53 to 1,000. In peace times the Paris hospitals show a mortality of 106 in 1,000. The cause of the decrease is attributed to better hospital conditions.

# LETTERS TO THE EDITOR

## More About Bed-Pan Covers

To the Editor of THE MODERN HOSPITAL:

Although not requested to take part in the symposium on bed-pan covers, I desire to submit some information on that subject. Nearly three years ago I designed a metal box for the use of the Cincinnati General Hospital, to be lightly but strongly constructed, with round corners as far as possible, and so arranged as to allow the bed-pans to be carried without spilling or upsetting, and also to permit of thorough cleansing.

I have long regarded the general custom of covering bed-pans with ticking, cloth, etc., as most objectionable. It does not thoroughly conceal the bed-pan either from the sense of smell or from sight, and is most humiliating to nurses and others obliged to carry them to and fro.

Some years ago Dr. Goldwater designed such a box, but had it attached to a carriage, with the result that it could not be as frequently cleansed as it should be.

H. T. SUMMERSGILL.

## A Serviceable Bed-Pan Cover

To the Editor of THE MODERN HOSPITAL:

In the December number of THE MODERN HOSPITAL I read with much interest the symposium on the problem of "bed-pan covers." I am at present superintendent of the Portland Surgical Hospital, Portland, Ore., and because of my experience I thoroughly appreciate the replies sent in to your inquiries.

Fig. 1. Bed-pan closed.

We have tried many schemes, but all more or less unsatisfactory. Finally I determined to find a solution of this perplexing problem, and to that end I set myself the task of devising a bed-pan with an attached cover, sterilizable, noiseless, and airtight. I have not only succeeded in meeting all the foregoing requirements, but have found more than one use for the cover, which can be adjusted while the patient is using the pan. It will serve as a bed shield, protecting the bed, obviating the necessity of disturbing a seriously sick patient to change the bed, made necessary by an unavoidable accident. The cover can also be used as a receptacle for wet and soiled dressings while the nurse is giving the patient attention.

The saving of the bed linen is an item worthy of consideration, as I discovered by its use while testing its virtues in this hospital. The verdict of the patients who used the pan during the test trial was that it gave them a feeling of perfect security and comfort, knowing that the bed was protected against any possible accident, enabling them to thoroughly relax, which they found a great benefit. Then, the pan, when removed from the patient, can be closed and set aside in the room while the nurse gives the necessary after-care, which formerly has been secondary to the removal of the pan. The cover closes tightly, confining the odor, and hence the nurse can take the pan any required distance without feeling she is causing a nuisance which she would otherwise be unable to prevent.

Fig. 2. Cover adjusted to serve as bed shield while pan is in use.

Fig. 3. Cover laid out flat in the bed, level with bottom of pan, to serve as a receptacle for wet and soiled dressing while nurse is giving patient necessary care.

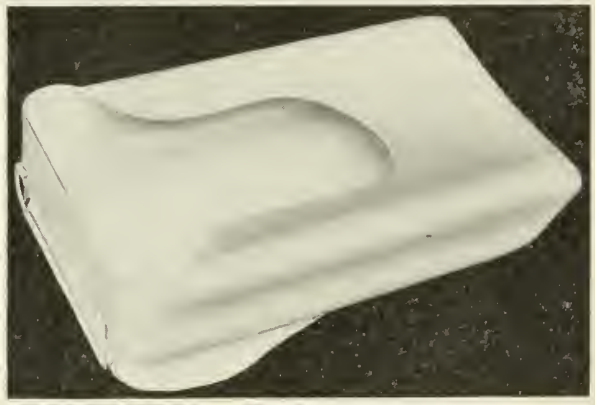


Fig. 4. Cover folded back under pan while pan is being emptied. Cover is entirely out of the way of contents.

In emptying the cover may be folded under the pan entirely out of the way of contents, and in that position can be immersed in the aseptic solution, or otherwise rendered aseptic for further use.

So completely does this pan overcome all the disadvantages of the open bed-pan that I secured a patent on it, and as soon as it can be manufactured I will put it on the market, happy in the knowledge that a long-felt need in hospital equipment has been supplied.

NELLIE M. ERICKSON,
611 Lovejoy street, Portland, Ore.

# QUERIES AND ANSWERS

### Who Owns the Hospital Record?

To the Editor of THE MODERN HOSPITAL:

Will you kindly let me know who owns the hospital chart—the hospital or the doctor? Have there been any legal decisions in the matter? J. M. C., Mich.

There are no court decisions, so far as we know, deciding the ownership of the hospital record or patient's chart. It is construed by all hospitals that the hospital itself owns the record, the record having been created by agencies in the employ of or under the control of the hospital. It is construed that the patient may have access to his or her record at any time, and that no one else has a right to the record or the information it contains without the consent of the patient or his legal representatives. Certainly the doctor who treated the patient has no right to the hospital record. The patient may change doctors at any time, and, if the doctor owned the record, he might refuse to allow the patient access to it for any subsequent illness in which there was another doctor employed. In other words, if the doctor controlled the record, he could go a long way toward controlling the patient's health problems for the rest of his life; that is, of course, inconceivable. The courts have practically conceded that hospitals own the records, because, whenever a court wishes a record produced in any case, the hospital itself or the superintendent is served with a subpena, commanding him or her to bring the record into court. We have been going into court with hospital records for thirty years or more as the superintendent of the hospital, but have never heard of a doctor being ordered by a court to bring in a hospital record.

### Salaries of Hospital Officers

To the Editor of THE MODERN HOSPITAL:

Kindly favor me with the following information:

Usual salary paid to a superintendent in a hospital of 100 beds where such superintendent has charge of the hospital and also the training school?

Usual salary paid to a superintendent of only training school in a hospital of 150 to 200 beds?

Usual salary paid to an assistant superintendent of hospital in a hospital of 150 to 200 beds, such position being what is generally termed business manager?

F. A. M., New York.

We think you will find these salaries entirely unstandardized. Each institution must settle its own problem, under conditions that will prevail nowhere else, and we think it perfectly right that this should be so, for otherwise all stimulus would be wanting, and these highly specialized executive officers would lose their individuality and be wholly colorless, and they would have just the same incentive to excel as the union labor worker who may lay just so many bricks a day and not one more. A superintendent of a 100-bed hospital who gets $200 per month is doing better than the average, but don't forget she is entirely responsible for an expenditure of $50,000 per year and for property valued, on an average, at $200,000 or more, and before she took charge she had to spend long years in nurse training and in the study of hospital administration. It is hardly any more work for such a superintendent to be also head of the training school, because in that case her assistant will do the training school work, and the concentration of authority in the person of the superintendent will serve to remove certain little items of friction that are sometimes annoying.

We think the average salary of the head of the training school in a 150- or 200-bed hospital would be around $100 per month, and she would live in the nurses' home.

The business manager in a 150- to 200-bed hospital doesn't exist as such. Usually the superintendent performs those duties, and other persons in the hospital shoulder enough of her details to give her sufficient time for this more exacting business. When there is such an office, it is because of peculiar local conditions that make it necessary; but, offhand, an expert administrator going into such a hospital to make a survey, and finding a "business manager" in addition to the superintendent, would look for a "nigger in the woodpile," and would probably have struck the source of the trouble for which he had been called in. Generally some dominant member of the board of trustees or medical staff is responsible for the "business manager" in a hospital of 200 beds or under, and also generally such dominant member wants something done as routine practice that a competent superintendent either would decline to do or would squirm under. What's a superintendent for if not to do the business of the hospital? Sometimes there is a steward or buyer of perishables, but such an officer merely carries out orders of the superintendent and performs other duties, such as cutting the meats, etc.

### Accounting for Hospital Funds

To the Editor of THE MODERN HOSPITAL:

I write to inquire what the general practice is regarding the inclusion of the item of interest on the investment in arriving at the cost of maintenance of hospitals. Is that item usually included, and, if so, what is the percentage of the cost of investment that is usually added to the various other items?

GEORGE J. NELBACH,
State Charities Aid Association, New York.

Hospital trustees have never yet learned that endowment or interest-bearing funds are a liability, or a trust, as well as an asset, and they nearly always oppose taking account of the capacity of funds to earn interest, or of wear and tear on hospital property; nor are there any standards by which such measurements could be made at the present time; nor are there any statistics which might be drawn on that would be of value in fixing the rates of interest on invested funds, or the losses to the hospitals by depreciation of their physical properties. It is almost a crime that this is the case, because, until some standards are created by which every item in the expense and income columns incident to the administration of a hospital are at hand, it will be absolutely impossible to create any other standards by which hospital costs and incomes can be measured.

This is an extremely important thing, since the magic figures of what we are accustomed to call "per capita cost" are dependent for their integrity and value on the items you ask about.

It is sincerely hoped that at the next meeting of the American Hospital Association a report will be made by a special committee that will attempt to unify the items to be included in hospital accounting, both on the income and expenditure sides. The trouble then will be, of course,

to get the hospitals to use such a uniform system, and it will undoubtedly mean a long and hard propaganda to bring about the use of the uniform accounting, but until this is done we will go on talking about a "per capita cost" of so much per day without the slightest reference to anything by which a comparison can be drawn between any two hospitals. Some hospitals pay taxes, water rates, lighting bills, and interest on borrowed money, and these must all be charged as current expenditures. These same hospitals may have an adequate laboratory of pathology, a good x-ray equipment, and an expensively conducted diet kitchen—all these departments under the direction of high-salaried, thoroughly trained people; another class of hospitals may pay none of the above service rates, and may have none of these scientific departments that spell service to patients, and yet all these two classes of hospitals might have precisely the same "per capita cost." But see how terribly unjust any comparison would be! In one case the hospital—with a conscience—is struggling to master an almost insuperable situation for the benefit of its patients, while the other hospital is wasting its funds—or worse.

## TO MEASURE WORK OF MEDICAL MEN

### Some Hospitals Are Attempting to Score the Efficiency of the Medical and Surgical Work—A Form of Card

Some of the hospitals are beginning in earnest to keep account of the work of members of their medical staffs. A few leaders in the profession have suggested within the past year or so that hospital boards had it within their power, and that it should be their privilege and their duty, to inquire into the amount and character of work of staff members, and that such inquiries, properly made, should go a long way toward fixing the net value of each staff member to the hospital.

Dr. Chas. H. Mayo, in a paper read before the American Hospital Association at St. Paul, held that much unnecessary, technically poor, and irresponsible surgery was being done in the hospitals of this country. He suggested that a board of trustees was in position to uncover much of this unworthy work by analyzing the case report to determine (1) what operations were performed, (2) for what diseases or symptoms, (3) how many diagnoses were proved correct on operation by reference to the preoperation history and the operative and postoperative findings, (4) by noting the number of patients who returned uncured.

No doubt similar methods of approach will yield as good results on the medical side and in all other departments of the hospital.

One of the hospitals has attempted to get at some of the items that make up the character of service of its medical men by instituting the use of the card at the bottom of this page.

### Brooklyn to Have a Third Mental Clinic

The authorities of the Long Island State Hospital are contemplating the establishment of a third mental clinic, providing satisfactory arrangements can be made with either the Greenpoint or Williamsburgh hospitals. Brooklyn now has two such clinics under the direction of the superintendent of the Long Island State Hospital. One is located in the out-patient department of the Pohemus clinic of the Long Island Hospital, corner of Henry and Amity streets, and the other in the Long Island State Hospital, Clarkson and Albany avenues.

Under the will of the late Mrs. Charles Francis, a resident of Massachusetts, who was a frequent visitor at Asheville, N. C., the Mission Hospital of that city receives $20,000 as an endowment fund.

SUGGESTED FORM OF REPORT ON EFFICIENCY OF EACH MEMBER OF PROFESSIONAL STAFF (DICKINSON)

Name
Position held — Average number of beds
(Salary — Residence in hospital — Method of appointment)

A. *Quantity of work;* months of duty; total visits required; total visits made; total hours given to hospital (or dispensary); vacation; illness, absences, excused, unexcused.
Estimated committee service.

B. *Quality of work* (thoroughness, promptness, rapidity).
1. Preliminary examinations, consultations.
2. After-care, examinations for discharge, instructions to follow-on.
3. Histories, personal inspection, personal notes, reviews, studies on end-results.
4. Laboratory work, supervision, personal work.
5. Training of hospital staff, nurses, dispensary staff.
6. End-results (Codman method): The end-result cards, easily grouped for each individual, record successes and errors—the errors scored as
a—lack of technical skill
b—lack of judgment
c—lack of care or equipment
d—lack of diagnostic skill
Failures grouped also by
a—patient's enfeebled condition
b—patient's unconquerable disease
c—patient's refusal of treatment, and by
d—surgical or medical calamities
Methods; comments on full histories by chief; review by consultant or efficiency committee; summary of history by clerk; choice by staff of certain operations as tests (e. g., suppuration in clean laparotomies).

C. *Personality;* integrity; disinterestedness; obedience to rules; team-play; kindness; cheerfulness; enthusiasm; and ability to inspire these.

D. *Progressiveness;* study of literature; travel to other clinics; membership and attendance at medical societies; originality; researches; publications.

E. *Executive ability;* initiative; organizing power; control.

F. *Teaching;* staff, nurses, dispensary; students; public clinics.

G. *Inspections;* number, by trustees, consultants, hospital inspector.
Certain defects to be heavily scored—such as lack of judgment.
Percentage to be given under each heading to be determined. Positions differ. Some positions will have a score for executive work, and some for teaching, and others will not. This will involve grouping and reporting such positions separately, but any man's abilities in any of the above matters should be noted even if not marked on a score.

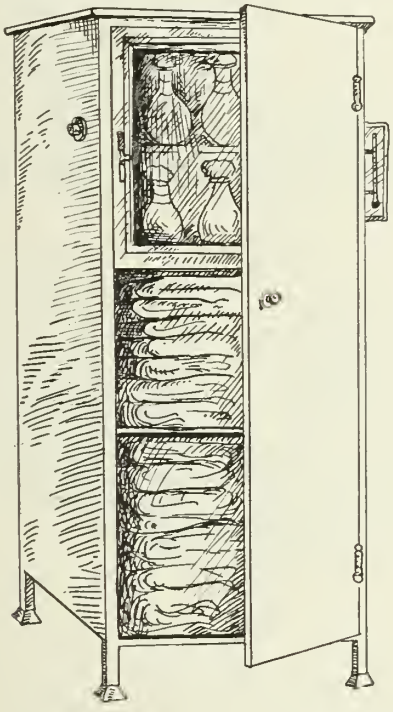
# NEW INSTRUMENTS AND APPLIANCES

VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.

Please address items of news and inquiries regarding New Instruments and Appliances to the editor of this department, 327 Southeast avenue, Oak Park, Illinois.

### Design for Combined Blanket and Solution Cabinet

This type of a combined blanket warmer and solution warmer and cabinet will be installed in the new University of California Hospital. One such cabinet will be placed in connection with each operating room unit. It takes up the same space as the ordinary blanket warmer, but is subdivided, as shown in the cut, into two parts, the lower part being capable of holding 16 to 20 blankets; the



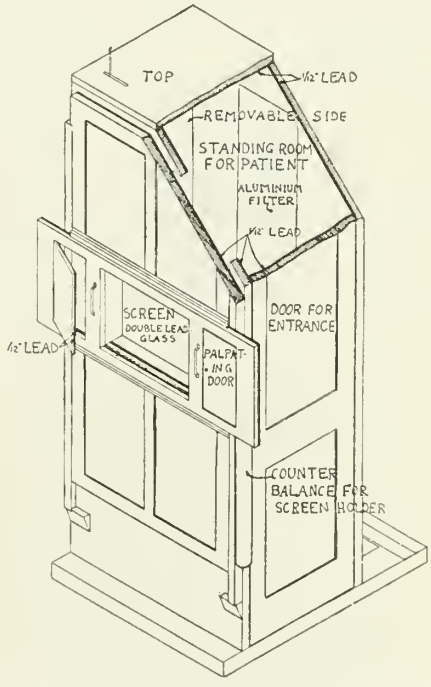
Combined blanket and solution cabinet.

upper compartment, which is inclosed by an inside separate door, is heated independently of the lower two shelves by an electric unit. The heat in this compartment is controlled by an electric thermostat, thus maintaining an even temperature of its contents. The capacity of this upper compartment is approximately 24 to 26 Florence flasks. The lower shelf of the upper compartment is insulated so as to protect it, to a certain extent, from the heat from the lower compartment, which is supplied by a steam coil which will be so installed that it will be impossible to get a temperature higher than 115 degrees F. or 46 degrees C. The dimensions of the entire cabinet are: 24 inches wide, 24 inches deep, and 72 inches high. It can, of course, be made with or without a sloping top.

There will be no water sterilizer, as such, installed in connection with our operating rooms. The carriage of the mattress sterilizer will be so constructed as to permit of holding a considerable number of Florence flasks containing distilled water and normal salt solutions, and other similar solutions, which will be sterilized once a day for three successive days. The bottles are carefully stoppered with cotton, sealed over the top with gauze, the cotton and gauze being placed on the bottles before they are placed in the sterilizer. After being removed from the sterilizer, after the final sterilization, they are placed in their proper receptacles, where they are kept heated to the proper temperature ready for use.

### A Safe Protection Apparatus for Roentgen Examination

Since the increased use of the fluoroscope in Roentgen examination of the chest, heart, intestines, etc., much concern has been felt by those operating apparatus as to the danger to the operator, as well as that of patients, in the continued exposure to the x-rays. Just what is the ultimate effect of such exposure is not yet understood, though much has been done in the way of study of systemic and blood changes. Experiments have demonstrated that there are blood changes in animals which have been exposed to the Roentgen ray, and there are several cases of death reported following lymphatic leukemia, the individuals




Dr. M. Milton Portis' cabinet for x-ray examinations.

having been exposed to the rays in their work as radiographers.

Dr. M. Milton Portis, of Chicago, has given much study to the question of x-ray protection, and has done valuable work toward proving or disproving claims with reference to the safety in using the fluoroscopic cabinet or table. In cooperation with Prof. Milliken, of the University of Chicago tests were made with a stock upright fluoroscope. It was demonstrated conclusively that secondary rays were present in various parts of the room, the test used being the gold-leaf electroscope. Being unwilling to accept the apparatus at hand as a safe one Dr. Portis then had con-

structed a cabinet which in many respects differs materially from other forms of apparatus used for a similar purpose.

The illustration shows quite clearly the details of construction. The cabinet is strongly built of hard wood and of such size that the patient is placed within this cabinet. Lead protection is used to a greater extent than has heretofore been customary, insofar as in addition to surrounding the tube with the usual portection the entire cabinet is lined with one-twelfth inch of lead on all sides. The fluoroscopic screen is mounted in a frame, this frame having two doors, one at each end. The purpose of these doors is that one can, when desirable, palpate the patient but at all other times the rays are completely shut off. Instead of using a single sheet of lead glass over the fluoroscopic screen two sheets are used. That portion of the cabinet through which the rays pass is covered with aluminum filter. By isolating the patient within the cabinet all secondary rays, which undoubtedly have much to do with the danger to the operator, are cut off. Only the useful rays, i. e., those passing through the patient and to the fluoroscopic screen, are liberated, but their action is again arrested when they are absorbed by the two thicknesses of lead glass.

This device has been used for some time and frequent tests indicate that it can be relied upon for protection.

### New Urethritis Syringe.

Syringes of the piston type, such as are usually prescribed by surgeons in their offices, or in the genito-urinary out-patient departments of hospitals, are a source of much annoyance and often the cause of negative results.

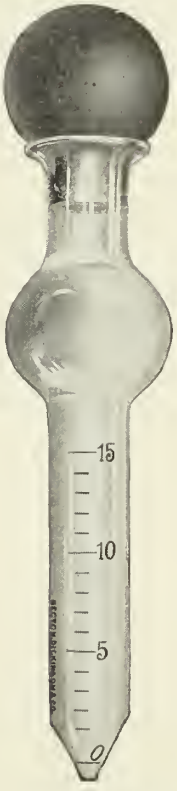



Fig. 1. Graduated urethritis syringe.

The uneven working of an unevenly ground syringe-piston makes it difficult to regulate the pressure and the charge is often injected with such force as to cause laceration of the mucous membrane. Through this laceration the germs frequently penetrate deeper tissues, thus increasing the danger of creating a chronic condition.

The syringes illustrated here overcome the objections pointed out, as the bulb permits of gentle regulation, and by simply exhausting the air in the bulb the desired quantity of fluid is drawn up into the barrel and can be discharged under perfect control.

Fig. 1 is a syringe which is especially suited for treatment of gonorrhea, because it permits of perfect regulation of the force of the injection and is easily sterilized. The barrel is graduated to 15cc (½ ounce), which is large

Fig. 2. General purpose syringe.

enough to distend the canal in order to medicate the entire membrane. The bulbous enlargement acts as an air chamber and prevents the fluid to be injected coming in contact with the rubber bulb; thus the injections of all the usual medications, including nitrate of silver and argyrol, are possible.

Fig. 2 has the same capacity as Fig. 1, but it has no bulbous enlargement. On account of the shape of the point it can be used for blood transfusion, washing out of veins, or in connection with a catheter in genito-urinary work. The bulb on this syringe is so designed that the fluid cannot flow back into the bulb from the glass barrel.

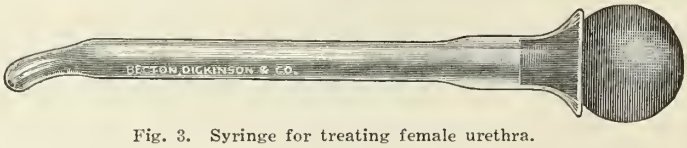



Fig. 3. Syringe for treating female urethra.

Fig. 3 is a syringe designed by Dr. Van Buren, of Omaha, Nebraska, especially for treating the female urethra. The tip is so shaped that a little pressure against the meatus will obstruct the return flow, so that in this manner the urethra is dilated and the mucosa unfolded so that the injected fluids will come in contact with all parts up to the sphincter muscle.

These syringes can be procured at the surgical supply houses under the trade name of Asepto urethritis syringes, and, as their price is comparatively low, they seem to be well adapted for hospital and dispensary use.

### Labor-Saving Machine for Use in Institution Laundry Departments

There are constantly brought to the attention of the hospital superintendent and the attending staff new inventions for use in the operating and sterilizing rooms and in the röntgen ray department, while but little has been said or written about other hospital equipment in those departments with which the surgeons and visiting laity rarely come in contact. One of the important departments in every hospital is the laundry, for whose use have been invented during the last few years several ingenious machines, the employment of which has, to a great extent, revolutionized the work in this department.

One of these machines which has caused widespread comment and attention is the Rose label, tape, and patch sewing machine (Fig. 1), which has been put on the market by the National Marking Machine Company, of Cincinnati. This machine is used for sewing the Rose patent

process patches (size ½ by 1½ inches) on laundry work of all kinds, and also for reinforcing buttons and buttonholes on undergarments. It can be used to advantage by every institution that has laundry work to do, whether much or little, because the expense of the Rose patch seems to be no greater than that of other patches, and the cost of attachment is cut materially. The garments, when taped with this machine, have a very workmanlike appearance (Fig. 2), and possess the means for identification of garments that do not take a mark readily or that should not be marked at all.

This machine is automatic, and sews around the four sides of the patch, cutting the thread and releasing the garment when the operation is done. The four edges of the patch are turned under and stitched down, and this

Fig. 1. Rose label, tape, and patch sewing machine.

prevents raveling or fraying when the garment is washed or worn. It automatically trims the thread and places the next patch in position ready to be sewed. The machine is simple in construction, and can be operated as any ordinary factory sewing machine, and consequently experienced operators are not required. When the foot is raised, the thread is trimmed, and when the foot is lowered, the patch is automatically placed in position for sewing.

The machine has great capacity, its production being limited only to the time taken to sew around the patch and the time required to place and remove the goods. It is claimed that an inexperienced operator can sew on 150 dozen patches per day of ten hours. The patches are permanently affixed by lockstitch, but can be removed if desired.

The laundry mark is put on the patch after the latter is placed on the garment. This neat patch is not objectionable, and prevents the marking of wearing apparel where the mark might show and avoids the indiscriminate marking of fine linens. It also obviates the use of the old-fashioned and impracticable metal tags, which were found troublesome both to the laundry department and to the owner of the garment because they come off easily and often tear the material.

This machine is recommended for those laundry departments where accuracy, precision, and speed are re-

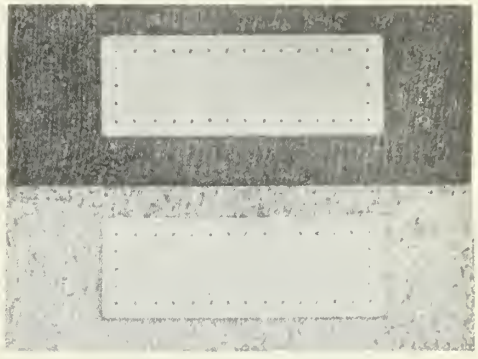


Fig. 2. Rose patent process patch on laundry work.

quired or desired, and where the losses of all kinds are to be reduced to a minimum, as by the use of it one seamstress can turn out as much work in one day as can be done by the old method in three days. If, therefore, only the labor-saving feature is taken into consideration, without estimating the neatness of the work, it seems that this machine deserves the attention of the managers of hospitals and kindred institutions.

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### Increased Demand for Artificial Limbs and Appliances in Europe and the Possible Effect in This Country

The demand for artificial limbs and orthopedic appliances of every description has been increased enormously in the European countries which are at war, and in consequence thereof there is a great demand for men who

Fig. 1. Young soldier with high amputation of both limbs, practicing walking on short temporary braces, with two canes.

are trained in the manufacture of such apparatus. Not only has the demand grown, but the number of available mechanics has greatly diminished, from the fact that the men skilled in this craft have been called to the colors, like

other men eligible for and fit to do military duty. In Germany alone (the only country from which we have statistics) there are now about 2,200 skilled instrument makers and orthopedic mechanics serving in the army.

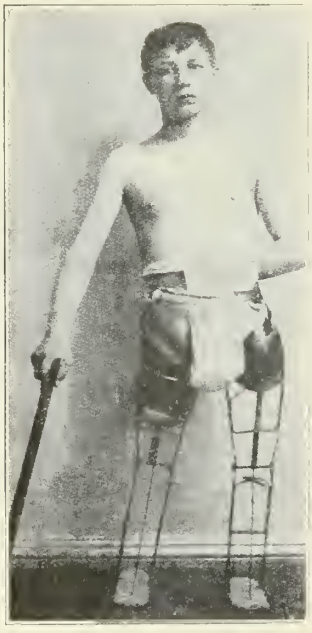


Fig. 2. Same man practicing walking on extended braces, with the aid of one cane only.

Several trade organizations representing the orthopedic appliance business have had a number of conferences with the army headquarters in order to impress on them the necessity of releasing, or at least granting extended furloughs to, men who are skilled in this class of work in

Fig. 3. Same patient as shown in Figs. 1 and 2, walking with a pair of artificial limbs of special pattern.

order that they may help expedite the work of putting crippled soldiers on their feet as quickly as possible, and to make room at the hospitals for the ever-increasing stream of wounded who are arriving from the front, and

Fig. 4. Man wearing one artificial arm enabled to do farm work.

also to make these men again able to take up their former work or some other occupation which may be open to them in their present state of physical disability. To what extent these conferences have been successful we have not yet been able to ascertain.

The various governments have established schools

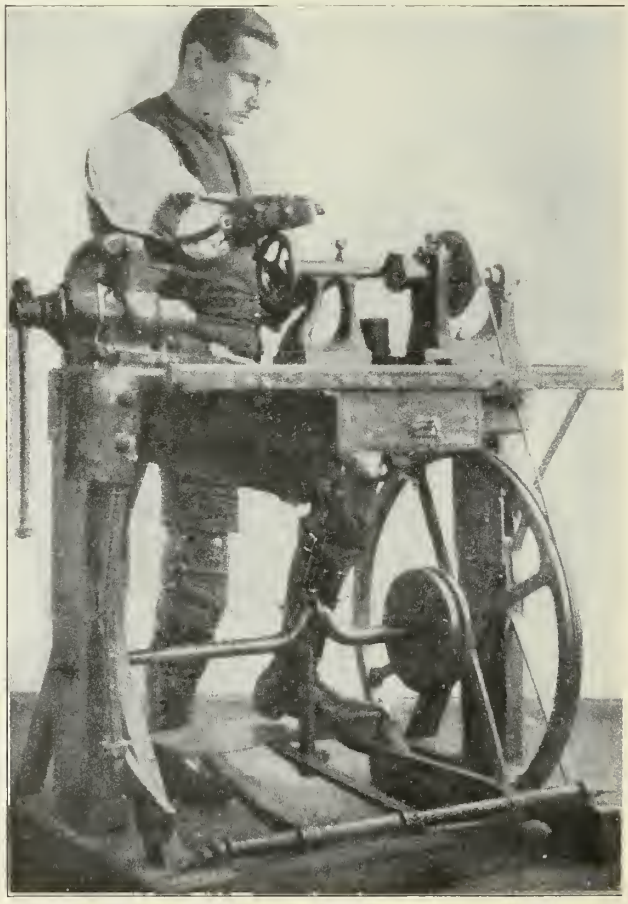


Fig. 5. Discharged soldier, wearing two artificial arms and feet, again working at his trade as a wood turner.

where these poor cripples are trained, first to use their artificial aids, such as hands, arms or legs, to the best possible advantage, and then to teach them new trades in cases where they are unable to resume their former occupation. To what extent they are successful is shown in some of the accompanying illustrations. Many lectures are delivered by medical and surgical authorities to the laity and hundreds of thousands of pamphlets are being sold and distributed free to the general public in order to ease their minds in regard to these disabilities, by showing them to what extent the surgeon and the orthopedist are able to improve the lot of their relatives who are coming home to them as cripples. We have especially in mind a pamphlet entitled "Kriegs-krueppel Fuersorge" by Professor Dr. Konrad Bisalski of Charlottenburg. This contains forty-four pages of text and eighty-four illustrations, some of which are here reproduced with the author's permission. Large cash prizes have been offered by individuals and societies for the purpose of inducing inventive minds to produce perfect artificial limbs, especially artificial arms, this being considered to be of greater importance than artificial legs, because a man wearing artificial legs may still be proficient in his work, yet this is rarely the case if he has lost one or both of his arms.

Fig. 6. Discharged soldier, who has lost both arms and both feet, supplied with artificial members and again working at his trade as locksmith.

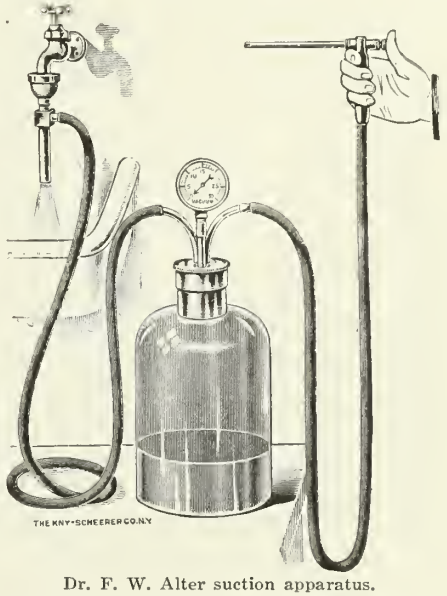
A great deal has been written in the daily papers to the effect that when the war is over there will be a great influx of working people from Europe; but we are fully convinced that this will not be the case with orthopedic mechanics and surgical instrument makers. On the contrary, it is feared that many of those who are now engaged here in this work may emigrate to the old country, because they will be assured there of permanent and profitable employment for many years to come. The European market on surgical instruments and supplies has practically been closed since the beginning of the war and American surgical instrument manufacturers were forced to increase their plants and are training new men for the purpose of producing at least to a certain extent those instruments and supplies which have heretofore been imported. We are reliably informed that it has been a most arduous and so far not a profitable undertaking, owing to the fact that the variety of surgical instruments is so great and the cost of making tools for them, installing machinery, etc., is so large that it will take years before the trade can be put on a profitable basis unless it receives some encouragement at the hands of the government in the way of protection.

## Suction Apparatus for Use in Operations in the Mouth and Throat

BY DR. F. W. ALTER, Cleveland, Ohio.

That a dry field of operation is of inestimable value in tonsillectomy, cleft palate, and all other operations in the mouth and throat is now fully conceded by all operators, especially by those doing nose and throat work.

The apparatus devised by Dr. Alter and illustrated here is so constructed that it requires no electric motor power, and can be used either in the office or operating room. It consists of the well-known Chapman filter pump and a 2-gallon bottle, to the neck of which is securely cemented a threaded collar, over which is screwed the cap, carrying a pressure gauge, an inlet and outlet tube, with rubber tubing for making connections, and a specially designed suction cut-off. The apparatus can be attached to an ordinary water faucet, and the gauge registers the vacuum in the bottle. The main advantage of the device is in the manner of working the suction portion. This part acts as a suction when the small piston at the end is pressed with the thumb and shuts off the suction when the pressure is released. The use of this instrument enables the surgeon to perform a true bloodless operation, and, as there is no sponging, there is less post-operative edema and soreness.




Dr. F. W. Alter suction apparatus.

By the use of this apparatus considerable time is saved, and the advantage of an even anesthesia will be appreciated, as there is less danger of shock and anesthetic calamity.

# THE HOSPITAL KITCHEN

Please address items of news and inquiries regarding The Hospital Kitchen (such as equipment and other matters connected with the kitchen and dependent departments of food storage and service) to The Modern Hospital, Kitchen Department, Metropolitan Building, St. Louis.

### Kitchen for 500- to 600-Bed Hospital

The plan (page 149) shows the kitchen equipment necessary for a hospital of large size—500 to 600 beds. The plan is based on the assumption that the dishwashing will be done either in the ward serving rooms or in a separate department specially located with the view of the greatest convenience to the general plan of the hospital. The design of the equipment is also based on the use of food wagons to carry away the food, with the exception of that required in the staff and help's dining rooms, for which steam table accommodation is provided.

Center ranges are shown with eight ovens, a broiler being provided on one side. The ranges are surmounted by a canopy connected to a vent of sufficient size to carry away the vapors and hot air, and prevent any of the heat getting into the kitchen. On each side of the ranges are the cooks' tables, with pan racks over them and a sink in each table. On one side the table also contains a bain marie and steam table for meats. At one end of the ranges is another long table for service.

The steam cooking department, which is a very important feature in a large institution, consists of five 4-bushel capacity (each) vegetable steamers, one 25-gallon, two 40-gallon, two 50-gallon, and two 60-gallon stock kettles, and two 80-gallon grease kettles, all steam jacketed. At one end are three institution urns—one 50-gallon for coffee, one 50-gallon for tea, and one 80-gallon for water.

Each steam apparatus should have a copper pipe leading from its vent to a header pipe to carry away the steam, the header pipe being provided with a drain or bleeder pipe, to take care of the condensation, to drip pan or depression in floor.

The entire steam outfit should be set in a steel pan with raised edges, or else in a depression in the floor, with drainage. A copper canopy should surmount the entire steam outfit, with a gutter inside to carry away the condensation, and the weight of copper should not be less than 32 ounces.

A large steam table is shown near the doors, and this and the service table will supply the wagons as they pass through the doors or to the elevators.

The vegetable room and scullery, with a vegetable peeler, sinks, and ample table accommodations, will care for the preparation of vegetables and the washing of the pots and pans. The entire equipment is placed well away from the walls, so as to allow easy access for cleaning.

Next the vegetable room is the bake shop, with a large brick-set oven, pan rack, pastry stove, steam-jacketed kettle, proof oven, dough trough, dough mixer with cake mixer, egg whip, etc., cooling racks, table, and sink.

A help's dressing room, with lockers, wash basins, and toilet, is located so as to be entirely shut off from the kitchen proper. The store room shown is intended for the supply of the current needs of the kitchen, and in a large city is amply sufficient, but in an institution located in the country a main storage room of much larger capacity would be required, from which the supplies would be transferred to the kitchen store room for current needs.

One end of the store room is for the dry provisions, and the other end contains the refrigerators and a meat block and cutting table, together with a meat chopper and a slicing machine, which latter is essential if economy in the service of cold meats is desired. The meat chopper is also a necessity, as it can also be used for chopping everything which requires to be chopped. It is a good plan to have all the shelving in the store room of metal and mounted on casters, so that they can be easily moved out from the walls for cleaning.

The area of the kitchen, including bake shop, store room, etc., is 61x80 feet, with the maximum window space, and none of the equipment touches the walls, which is the only way to insure sanitary conditions.

P. B. SCHWEIKERT, Cincinnati.

### War Brings New Porcelain Utensils

One of the results of the war was the stoppage of the importation of laboratory porcelain, and this has resulted in the manufacture of laboratory porcelain in this country, which has stood the hydrochloric acid tests equally well with that manufactured by the Royal Berlin Pottery in Germany, which until now has been regarded as the standard.

Experiments with porcelain for cooking purposes had been going on for several years and had culminated successfully about the time that the shortage of laboratory porcelain took place; and, as the batch, body, and glaze necessary for these utensils is the same as for the best porcelain cooking ware, the manufacturers had only to adopt the molding process necessary to produce the laboratory ware and fire at the same temperature (2,600° F.) as their cooking porcelain ware to produce the laboratory ware and supply the demand in this country successfully.

The cooking porcelain ware is being produced in ivory, white, brown betty, and olive green, plain and decorated, and for private ward work the pretty decorations and delicacy of the porcelain is made highly attractive, while for ordinary use the plain porcelain will give the best service, because actual breakage is the only thing which can affect it, as it cannot crack or craze from the heat of the oven.

The credit for saving the laboratory situation belongs to the Guernsey Earthenware Company, of Cambridge, Ohio, who were the pioneers in the introduction of American-made earthenware cooking utensils which are in such general use today. This earthenware product is fired at 2,400° F., while the porcelain cooking ware which they have recently put on the market is fired at 2,600° F., the same as the porcelain laboratory utensils.

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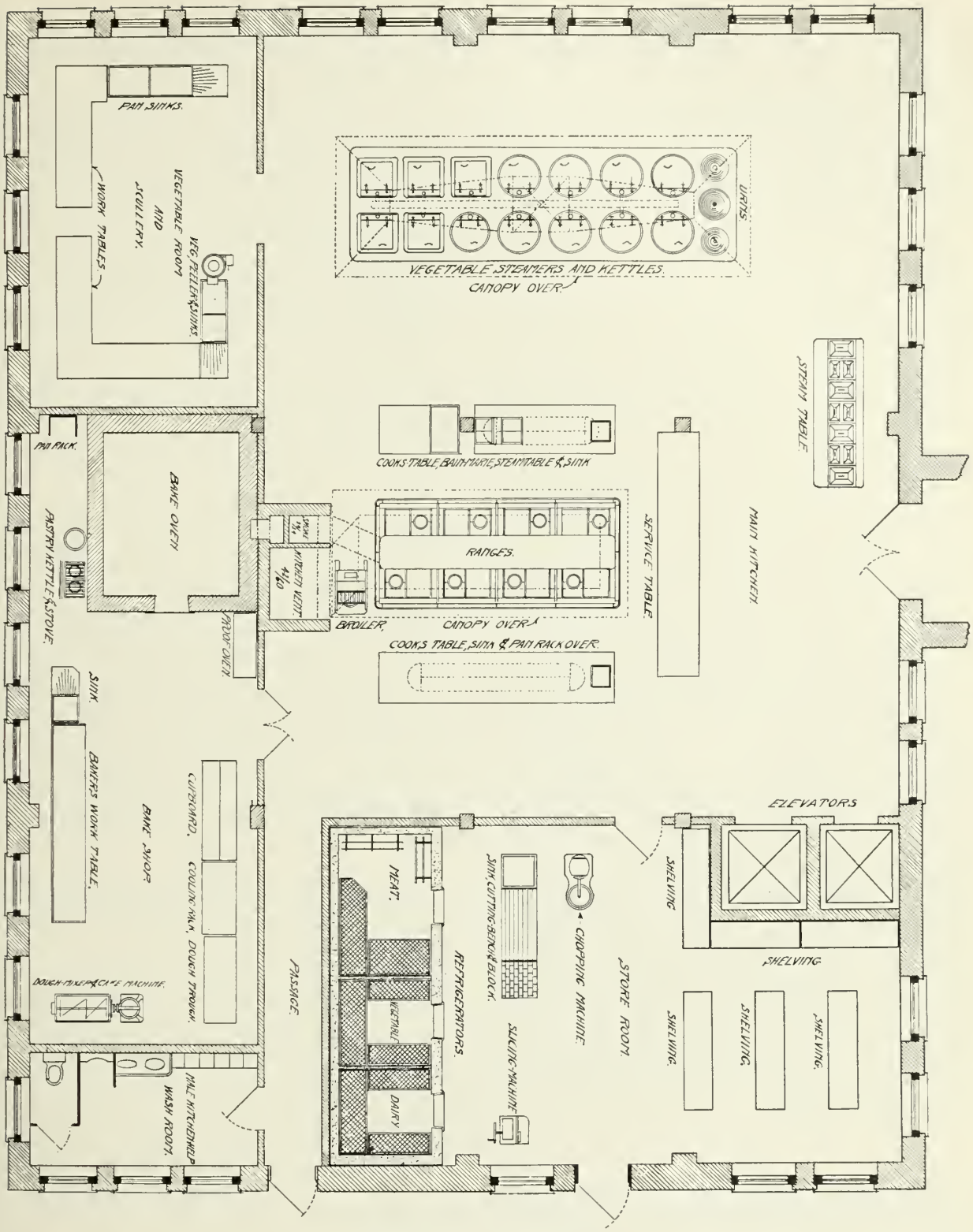
Dr. William A. White, superintendent of the Government Hospital for the Insane, Washington, D. C., is asking that the name of the institution be changed to read merely "Government Hospital," and recommends the introduction of a policy of voluntary commitment to partially supplant the present plan of forced court commitment. Dr. White declares that needless attention is called to the malady by the present name of the hospital, and he is of the opinion that voluntary commitment would offer relief to many persons who need treatment and would gladly avail themselves of it but for the stigma of the condemnation of a lunacy court.




Kitchen for 500- to 600-bed hospital.

### Sleeper-Davis Memorial Hospital, Peking, China

This new hospital, recently erected by the Methodist Episcopal Church at a cost of $180,000, is a five-story structure and has accommodations for 150 patients. It is thoroughly modern in both construction and equipment. Dr. Wallace Butterick, director of the China Medical Board; Dr. Simon Flexner, of the Rockefeller Institute for Medical Research, New York; and Dr. William H. Welch, professor of pathology at Johns Hopkins University, were guests of honor at its dedication.

### French and American Artificial Legs

Dr. Docroquet recently read a paper before the Paris Academy of Medicine on the "Gait of Men Provided with an Artificial Leg." The doctor, in making a comparison between the French and American appliances stated that the latter, though more fatiguing, permitted free flexion of the knee, resulting in a better gait with such a leg. The gait in cases of amputation of the lower leg is often so perfect, whether the appliance be French or American, that the amputation is not suspected.

## Boiler Room Economics[1]

By THOMAS HOWELL, M. D., Superintendent, and PHILIP MURRAY, Engineer, New York Hospital, New York City.

About ten percent of the expenditures of the average hospital are for the engineering department. It is, therefore, apparent that this is an important department. As such it deserves careful study and oversight. In this paper the writers discuss some commonplace engineering subjects, but make no attempt to treat them in an exhaustive or scientific manner.

The question as to whether a hospital had better produce its own electricity is one which is occasionally asked. This question has been raised more frequently of late because, in the large cities at least, so many business houses, for reasons of economy, convenience, and cleanliness, or in order to utilize space more advantageously, are abandoning their electrical generating plants, and are buying their electricity from commercial plants. Their action naturally causes observing hospital superintendents to ask the question whether it would not be more advantageous for them to buy their current.

In this connection it must not be forgotten that the requirements of a business house or factory are very different from those of a hospital. The demands of a hospital are usually much more varied, and are continuous day and night, including Sundays and holidays.

While freely admitting that factories and business houses are frequently more satisfactorily served from a central plant, it is nevertheless our opinion that hospitals, at least those with over eighty or a hundred beds, should produce their own electricity. Hospitals of this size will usually have heating plants, steam laundries, steam cooking apparatus, steam sterilizers, refrigerating plants, etc. These serve to create a demand for steam throughout every hour of the year.

The steam required by part of these activities at least can be used in making electricity, and this without any loss of efficiency. In this way, electricity is produced as a by-product, and at a very insignificant cost. This is particularly true during the winter months when a large amount of steam is required for heating purposes.

Strange as it may seem, it has been proved that steam which has passed through an engine is more efficient for heating purposes than the same amount of steam direct from a boiler.

Mr. Wright, Superintendent of the S. R. Smith Infirmary, Staten Island, reports that in 1912, the last year that the hospital purchased its electricity, its heat, light, and power cost was $8,068.21. In 1913, with its own electrical plant, the cost was $6,458.91, and in 1914, $6,369.89. This is a saving of over 21 percent. Other hospitals have shown equally satisfactory results.

### COAL

Bituminous coal will give better results, pound for pound, and dollar for dollar, than will anthracite, but in many cities the use of bituminous coal is prohibited on account of its tendency to produce great volumes of smoke. Where it is not permissible to fire with bituminous coal, one of the steam sizes, or cheaper grades of anthracite coal, is ordinarily used. These are known as pea, buckwheat, and rice.

The size and quality of the coal best fitted for its use must be determined by each hospital by actual tests. At the New York Hospital we have found by experience that the best grade of No. 1 buckwheat is the most economical for our plant.

We pay about fifteen cents a ton above the regular price for No. 1 buckwheat in order to obtain coal from a certain mine, because it gives us the best results. A trial of No. 2 buckwheat, which sells for about fifty to sixty cents less a ton than the coal we are using, gave unsatisfactory results. Our experience with pea coal was also unsatisfactory. It cost more per ton than the No. 1 buckwheat which we use, and the number of tons burned was about the same. What we would emphasize in connection with this subject is that every hospital should make careful tests to determine what coal best meets its requirements, and then to insist upon getting it.

*Facilities for Weighing.* Some dealers are dishonest. Some dealers have dishonest employees. Sometimes honest mistakes are made in weighing. For these reasons no hospital which buys coal can afford to be without suitable wagon scales. We know of one large hospital which had no wagon scales because they were considered unnecessary and expensive. At the end of the year it was discovered that they were short nearly 1,000 tons of coal. It is unnecessary to add that an order for scales was placed immediately.

### MECHANICAL STOKERS

Mechanical stokers are occasionally of considerable service in bringing about boiler room economy. The Hospital of the Good Shepherd, at Syracuse, N. Y., installed a set, and in eleven months saved $3,600 from its coal bill. Dr. Pratt writes concerning it as follows:

"It burns only the amount of coal necessary to obtain the steam pressure desired. The cheapest kind of soft coal can be used. As it is a self-feeder, one man can easily take care of two boilers and also look after the engine room. The mechanical stoker has this additional advantage, that, being self-fed from a magazine that is never allowed to become empty, the cold air does not reach the fire nor the metal work of the boiler, and so saves loss of steam and destruction of tubes and other iron work, as is the case when the door to fire box is frequently opened to throw on coal."

### BOILERS

Boilers must have sufficient capacity to produce the required amount of steam without forcing. They must be kept free of internal scales, and the tubes and flues must be frequently cleaned.

The brick work must be kept in good repair in order to prevent air leaks into the fire box and combustion chamber. It is very essential that the grate bars in the furnace be of a suitable design. If this is neglected a considerable amount of coal may be wasted.

The furnace doors should be tight, and only a sufficient admixture of air admitted to consume the gases leaving the furnace.

There should be a feed water heater of sufficient capacity to supply water to the boilers at about 200 degrees. Pumps designed to pump hot water are essential.

Much depends upon the fireman, and there are very few who are competent. A careless fireman will nullify all attempts to secure boiler economy. When you inspect your boiler room observe carefully the work of the fireman. Notice whether he spreads the coal. To insure perfect combustion coal must be spread evenly and thinly over the fire.

In cleaning the fires the fireman should do so as rapidly as possible, as the open furnace doors allow the cold air to rush in and cool the boiler. Care must be taken not to dump unconsumed coal with the ashes.

It is very essential that the water in the boiler be kept at the proper level.

[1]Paper read in the Annual Conference, American Hospital Association, San Francisco, June 25, 1915.

A damper regulator is necessary, as it prolongs the life of the boiler and effects a saving in coal. However, with a mechanical stoker burning soft coal it cannot be used, for it defeats the purpose of the stoker and produces great volumes of black smoke.

*Boiler Scale.* One cause of boiler inefficiency is scale. This scale consists of impurities which are precipitated from the water when heat is applied to it.

Scale is familiar to you all. You have seen it in the steam kettle on the kitchen range. Scale collects on the inside of a boiler, on the tubes, shell, and head. It acts to thicken these, and accordingly more fuel is required to produce the requisite amount of steam, as the heat must pass through the iron of the boiler and also through the scale, which is a poor conductor. It is apparent, therefore, that the more scale there is the greater the waste of fuel.

Many engineers favor the use of compounds in removing the boiler scale. Our results with compounds have not been satisfactory because of their tendency to cause foaming in our boilers, thus carrying the water from the boilers to the engines, a dangerous result. Under certain conditions these compounds may be of service, but we have found it safer and more economical to remove scale by hand.

### ENGINES

Opinions are divided as to the most economical engine, but no matter what kind of engine is installed it must be given careful oversight in order to obtain economical results. There is considerable loss of steam, and, consequently, of coal, when the internal parts of the engine are neglected. Care should be exercised in seeing that all valves are properly adjusted, and that the piston and springs are kept in proper alignment. Leaky stuffing boxes and valve stems show want of care on the engineer's part. It is very desirable that steam traps on high pressure systems be kept in good working condition, as they are a source of loss if not kept in proper order.

### PUMPS

Elevator, house and other service pumps are often overlooked, and their leaking pistons and steam valves are a great source of loss that is not apparent to the casual observer.

### EXHAUST STEAM

With non-condensing engines exhaust steam is a fruitful source of loss, especially during the summer months, but, as stated before, during the cold weather this steam can be used for heating purposes, for which it has been found more efficient than direct steam. Exhaust steam can also be used in the laundry drying rooms. It is not practicable to use it for cooking purposes. It should be, however, used in heating warming tables, etc. One of the great uses of exhaust steam is in heating water for the house service. It is a decided waste to use live steam for this purpose. At the New York Hospital water was formerly heated by live steam, and the results were unsatisfactory on account of the expense, and because the thermostatic control did not always control and as a consequence the water was frequently either too hot or too cold. Finally a hot water heating device operated by exhaust steam was installed, and while it has no thermostatic control it has proved very satisfactory. This change resulted in an annual saving of approximately $3,000.00.

### LAUNDRY

In the equipping of a laundry plant it is desirable that each piece of machinery have its own motor attached, as in this way it is possible to operate any one machine without operating the entire plant. Electrically heated flatirons and body ironers consume a great amount of electricity. At the New York Hospital we have found steam presses very much more economical than electrical body ironers, and also more useful and easier to operate. We estimate that our two electrically heated body ironers consumed about $3.00 worth of electric current daily. They were replaced with three steam presses, and the cost of operating these is not appreciable.

### ELECTRIC LIGHTING

When we used carbon filament lamps at the New York Hospital, and were perhaps a little careless generally about the amount of electricity consumed, our ampere meter during the winter months frequently showed that we were delivering 900 amperes of current. Since Mazda lamps of the tungsten type were substituted for the carbon filament lamps, and other economies introduced, the ampere meter rarely indicates that we are using over 450 amperes. Too little thought has been given to the lighting of institutions. In many instances the lamp fixtures are not properly located, and the number of lamps is too large or too small; for instance, in one of our small sterilizing rooms, which is very high, we had a cluster of eighteen lamp bulbs against the ceiling. By lowering the fixture we got just as efficient light with four bulbs.

### MINOR ECONOMIES

By sifting the ashes from the kitchen ranges, it is possible to reclaim fifteen to twenty tons of coal annually. However, where gas sells for eighty cents or less a thousand cubic feet, it will be found much more cleanly and convenient and about as economical to burn gas in the kitchen ranges. We have done our cooking with gas for a year, and have found it very satisfactory. We should not consider again the use of coal in kitchen ranges.

### THE ICE PLANT

To get the best results out of a refrigerating plant it must be carefully looked after. During the winter months when the demands upon it are very light, the engineer should thoroughly overhaul it. It is particularly essential that he should see that the circulating water coils are thoroughly cleaned. If these coils are allowed to get choked up with sediment the efficiency of the plant is reduced to the minimum. We have found that neglect to clean out the coils of our plant for six or eight months will reduce the efficiency fifty percent. In other words, before the tubes are cleaned out it is necessary to operate the plant twenty-four hours a day, but after they have been thoroughly cleaned it is only necessary to operate the plant twelve hours a day.

### PIPING

It would hardly appear necessary to call attention to such obvious wastes as leaky pipe joints and valve stems, and improperly covered steam, hot water and brine pipes. But there are many well-managed hospitals where too little attention seems to be paid to these sources of waste. Superintendents will do well to thoroughly inspect the hospital piping at frequent intervals. They should insist that the engineer promptly and properly repair all pipe leaks instead of resorting to tin cans to catch the drip. If you are planning a new hospital, insist that the steam, hot water, and brine pipes be so located that they are easily accessible for repairs and re-covering. Pipes buried in the walls and floors have given us no end of trouble and expense at the New York Hospital.

# HINTS FOR HOSPITAL SUPERINTENDENTS

This column is maintained as a help and reminder to hospital workers about the little things in administration. It is urgently requested that everyone contribute his and her "hints." Each item added to our knowledge helps to fill the common storehouse from which all may draw supplies.

Some two or three years ago an enterprising firm put out some very excellent chair and bed and operating table cushions and pads. Since that time a good many hospital people have been heard to say, when speaking of these pads, that they made their own and found it unnecessary to buy commercially made devices of the sort.

The hospital people had better think about this just a little bit; as a matter of fact, the hospitals do not make their own cushions and pads; they take a clean sheet or a clean blanket, or a pillow, and use that. If it happens to be that the patient needs propping over on one side in the bed with a pad at his back and a new blanket is used, it is liable to get stained and soiled; it costs 50 cents to launder a blanket, to say nothing of the damage to the fabric in being washed.

The idea of "making something else do" is poor hospital economy. Better buy your cushions and pads from those who make a business of making them, and who make them in large quantities and probably a good deal cheaper than you could, even if you went about the business in the right sort of way, which you do not.

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Miss Maud L. Cook, R. N., superintendent of the Marietta Phelps Hospital, Macomb, Ill., sends in the following hints:

Our hospital is only 25 beds, and financially we are not in good condition; but I may offer a suggestion or two for the benefit of other superintendents similarly situated. I am refrigerating my own ice. I have a large zinc tub, thoroughly scrubbed and elevated so that its contents cannot be polluted. It is filled with sterile water, and, while we have had four and five typhoids, it has about sufficed for our needs.

I read the discussion on the wastage of butter. Since coming here I have bought a set of butter paddles and have balls made, enough at a time to keep us going for forty-eight hours. This is from tub butter, and even the smallest fragments are not wasted. I serve one on each plate, and allow six or eight extra on a plate at the table, and serve a second helping from this with a nut pick. The butter balls look very nice and have the charm of economy.

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More friends are made for a hospital by courtesy at the door than by any other one thing. The doctors and nurses may be ever so able and attentive and the hospital equipment ever so good; if a patient or his friends have met with discourtesy on the threshold, the bad taste will stay a long time, and is very bad to remove. And don't forget that your telephone switchboard is a part of your front office-service, and that a young person who might be quite courteous when face to face with a visitor might easily be very ugly over the phone. Better "eavesdrop" a little bit in this matter and take seriously complaints that reach you. The doctors will give you a lot of help in checking up abuses of courtesy if you will encourage them to do so.

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A trustee, or staff member, or a superintendent who employs hospital property or funds or facilities to his own personal advantage is robbing the sick—just as surely as though he stole part of a meal off a tray. A trustee who compels the hospital to buy from a house in which he is interested, and permits that house to charge more for goods than they could be bought for under competitive bids, is stealing from the hospital; call it by any pleasanter name you please—it is just common stealing, and stealing at that from sick, helpless, defenseless people.

The physician or surgeon who wastes hospital property in the form of supplies, or who demands for himself or his private patients more than the hospital can give to all other doctors and patients, is guilty of one of the meanest forms of graft. The doctor who demands or accepts a commission from a hospital for sending in a patient is robbing the patient quite as conclusively as though he picked his pocket while the patient was sick in bed.

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If you are going to get out an annual report this year, why not take an odd few minutes off now and then and think about it? Ninety-five percent of the hospital reports are as effective as blank cartridges would be in war. They don't tell what they start out to tell, and, if they told it ever so eloquently, the information would be absolutely useless.

Annual reports are published for one of three purposes: (1) to give the hospital board and the hospital's financial supporters information about the work of their institution for the past year, so that they may know the exact situation and meet it intelligently; (2) to give an account of the scientific work that has been done for patients, for the benefit of medical science; (3) as a frank piece of publicity to win friends for the hospital and bring new and greater financial support.

You can't kill all these three birds with one stone, so why not pick out the bird you want the most, and select a stone that will just about fit his case? Long lists of diseases with meaningless names mean nothing to non-medical people, and medical men, with the possible exception of the few members of your own staff, don't care a fig whether you treated nine or twenty cases of colelithiasis, or whether you did one or a hundred gastroenterostomies, or whether fourteen of them were gastroileostomies.

On the other hand, figures are very dry reading if carried beyond the merest generalities; it means nothing to the reader that you bought and used 14,748.3 pounds of fish, which cost $1,427.19, or that your bill for repairing surgical instruments was $194.13; and, even if you were to say that your per capita cost was $1.59, it would mean nothing to anyone—nothing to the average layman, because he doesn't know what the term "per capita cost" means, and it means nothing to a trained hospital administrator or a medical man unless you accompany the figures with a detailed statement showing what the $1.59 covers and includes.

Better, in your annual report, make up your mind about the audience you want to reach, then talk all the way through a language that particular audience will understand, and about things it will be interested in. In that way your report will get you something.

# THE MODERN HOSPITAL

*A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services*

Vol. VI *March, 1916* No. 3


## ARCHITECTURE AND COSTS OF THE ITHACA CITY HOSPITAL

### A Modern Hospital Group, Built Into a Beautiful Landscape, Is the Pride of the City—Made Famous by Cornell University—Some of the Details and Costs—The Medical Organization and Notes on Administration


By ORNAN H. WALTZ, of Gibb & Waltz, Architects, Ithaca, N. Y.; A. T. KERR, M. D., Cornell University Medical School; WINNIFRED A. HIGGINS, Superintendent


#### THE ARCHITECTURE

By ORNAN H. WALTZ

THE Ithaca City Hospital is owned by the Ithaca City Hospital Association, a private membership corporation, and the new buildings and grounds were opened to the public in January, 1914. The hospital buildings are located within one-half mile of the center of the city on a five-acre plot of land, with three driveway entrances, and overlooking Six Mile Creek Gorge, a beautiful wooded ravine about 500 feet wide and 150 feet deep. This location insures for all time ample space for the present and future buildings, permanent light and air on all sides, and the cool ravine breezes for the summer months. The grounds have been laid out to take every advantage of the natural beauties of the location and planted in harmony with the surroundings, and the buildings, porches, court, and entrance so located and arranged as to give privacy for convalescing patients.

The buildings consist of a three-story central administration building, connected by well lighted corridors with the two two-story pavilions. The nurses' home, a separate building, was made by moving and joining together two houses originally on the grounds and then remodeling to fit the needs, at an expense of about $4,000.

The main entrance to the hospital buildings is on the northeast side of the administration building, with the offices, doctors' offices, receiving rooms, telephone booth, lavatory, and reception room on the first floor. On the second floor are private rooms, bath rooms, diet room, and chart and linen rooms. On the third floor are the operating rooms and the superintendent's suite. On the fourth floor are three orderlies' rooms. All floors of the administration building are served by an automatic push-button type elevator.

On each floor of the two pavilions are wards with porches, private and semi-private rooms, together with the bath rooms, diet kitchens, utility rooms, and chart rooms, so arranged as to take the best advantage of the light and air, and making compact arrangement for the head nurses' supervision and to save time and steps for the nurses. Diet kitchens of pavilions are served by automatic push-button type dumbwaiters.

The four porches for the private room patients are located between the administration building and the pavilions, overlooking the court and the gorge. The superintendent's suite and one private room have private balconies.

In the basement are located the kitchen department, stores, class rooms, nurses' dining room, x-ray department, women servants' rooms, laundry, servants' dining rooms, bath, and lavatory.

The heating apparatus is in the subbasement, under a connecting corridor, and consists of two low-pressure heating boilers, one high-pressure boiler, and one hot water heater, together with coal bunkers, ash lifts, etc. All pipes are distributed throughout the buildings in large ducts under the basement corridors.

The three staircases are of steel and Alberene stone, and separated from the corridors by metal doors and wire glass windows. All departments are connected with intercommunicating telephones, all private rooms have outside telephone connections, and all rooms and wards have silent

call signals to the chart rooms, with relays from one building to another.

The buildings are decorated throughout with three coats of Century wall paint; the rooms in a soft gray-green color, with light ceilings; the corridors in tans and browns, with light ceilings, and the operating rooms in white.

The buildings are constructed with concrete foundation walls; the outside walls above grade are 8-inch hollow tile, faced with gray wire-cut brick and trimmed with Indiana limestone; the inside walls, at sides of corridors, are 12-inch hollow tile; partitions are of gypsum blocks. The floor construction throughout, including attic floors, is of hollow tile and reinforced concrete, floated on top. The roofs are of Imperial Spanish red tile on sheathing and rafters. Interior walls and partitions are all plastered two coats, with corners rounded, without casings; corridors are plastered 4 feet high with cement. The finish throughout is of oak, varnished. Doors are of flush vertical veneer oak, and for all rooms are 4 feet wide, with wood transoms. Windows are double slide sash, glazed with sheet glass, with tip-in transoms over. Base in all parts is of Keene cement 6 inches high, coved out to the finished floor. Floors in operating rooms, bath rooms, lavatories, and utility rooms are of terrazzo or tile. All other floors are covered with heavy battleship linoleum over the cement.

### DETAILED COSTS OF BUILDINGS

Administration building and two pavilions, 486,064 cubic feet.

Cost of buildings complete, including everything required in the structure—heating plant, plumbing, electric work, fixtures, and signal system ..... $98,542.93

Or 20.2 cents per cubic foot.

Cost of appurtenances, including linoleum floors, screens, shades, refrigerators, decorations, and automatic push-button elevator and two dumbwaiters ..... $11,278.58

Or 2.3 cents per cubic foot.

Cost of appurtenances (separate from above items)—

| | |
|---|---|
| Cooking apparatus | $ 500.00 |
| Sterilizing equipment | 1,000.00 |
| Operating room equipment | 700.00 |
| Maternity delivery room equipment | 150.00 |
| X-ray equipment | 2,000.00 |
| Laundry equipment | 2,400.00 |
| Demonstration and class room equipment | 156.00 |
| Office | 225.00 |

Furnishings for each single room, $150.00; double rooms, $250.00; wards furnished partly from old hospital equipment.

### THE MEDICAL STORY

By A. T. KERR, M. D.

The Ithaca City Hospital had its inception in the late eighties through an association of women who made an arrangement with the hospital authorities in a neighboring town to send there those greatly in need of hospital care. Although these women joined with others and formed in 1889 the Ithaca City Hospital Association, it was not until 1891 that they secured a building for a hospital. In that year the heirs of one of the prominent citizens gave to the association a site and building. The hospital was opened on January 1, 1892, and continued in the same locality until 1914, when it was moved to the new building on the hill. The original frame structure in which the hospital had started with one nurse and three or four beds had been added to several times until the group of buildings accommodated between 30 and 40 patients.

The hospital has never had a restricted attending staff, all physicians in Ithaca being permitted to take their patients there. For many years the nursing was in charge of graduate nurses, but in 1913 a training school was established.

In 1910, in order to raise the money for the building of a new hospital, the trustees of the hospital asked the mayor of the city to appoint a special committee which should include persons not connected with the hospital association. A committee of 152 was appointed, and this committee obtained pledges to the amount of about $130,000. Subscriptions for large and small amounts were obtained from a great many different persons, so that the hospital is truly a citizens' hospital. The site was selected, and in July, 1911, the building committee was appointed. In June, 1912, the final plans for the building, prepared by Messrs. Gibb & Waltz, were submitted to the trustees and accepted. After a careful survey of the subscriptions, it was estimated that the building committee could safely count on $120,000. In order to bring the estimate within this figure, it was necessary to abandon temporarily the original plan that called for a separate building for the heating plant and laundry, and to rearrange the basement, with consequent crowding, in order to accommodate the laundry there and to construct a subbasement under a part of the building for the heating plant. These are as satisfactory as could be expected, but the clinical laboratory had to be given up and this work taken care of outside of the building. The ashes must be taken out and the coal received near the main entrance, and this is a source of constant annoyance.

The building was planned to care for about 80 patients, and to meet the local conditions as they were at the time the building was constructed to take care of the estimated growth during the next ten or fifteen years. The growth has far exceeded our expectations. While in the old hospital the daily average rarely exceeded 35, already in the

Fig. 1. Ithaca City Hospital. Northwest corner, showing main entrance.

new hospital we have reached full capacity, allowing for classification of patients.

Since the architect's description and plans show so admirably the arrangement of the building, it seems best that I should point out some of the failures. The waiting room for the family or friends of those who are very ill or undergoing operations is far too small and too public. More than twice as much room should have been allowed for administration on the first floor of the main building. The number of private rooms should have been twice as great. The battleship linoleum that was used throughout the building, except in the bath rooms, has been in the main very satisfactory. It has caused trouble in some of the service rooms and in the basement by coming loose from its attachment. The electric push-button elevator has been very satisfactory, except for the noise, which is a serious drawback, and that is, I understand, un-

Fig. 2. Ithaca City Hospital. Plot plan.

avoidable with this type of apparatus. The operating room suite has worked out splendidly, but the large amount of work there has impressed the need of more storage and work room.

Two small frame dwelling houses that were on the property that was bought for the hospital site were connected and used as a nurses' home. The growth of the hospital has already made the accommodations here inadequate, and it is hoped that a new dormitory for nurses may be constructed soon, since the opportunities for a first-class training school, due to the fact that many of the lectures are given at the university, are unexcelled.

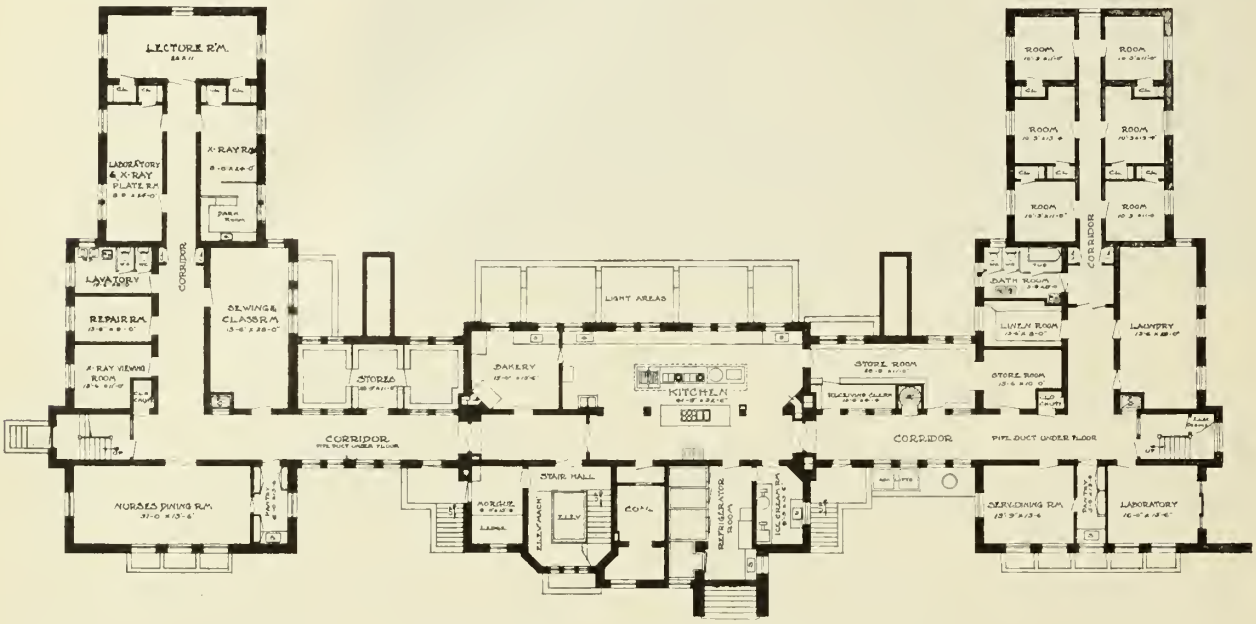


Fig. 3. Ithaca City Hospital. Basement plan.

## THE ADMINISTRATION

By WINNIFRED A. HIGGINS

The Ithaca City Hospital is one hospital peculiarly for the people and by the people. Built by popular subscription obtained from hundreds of people, this is an "open" hospital; that is, any physician or surgeon in good standing is at liberty to bring a patient to any part of the hospital for treatment. This is the only general hospital in the county. As there are, roughly speaking,

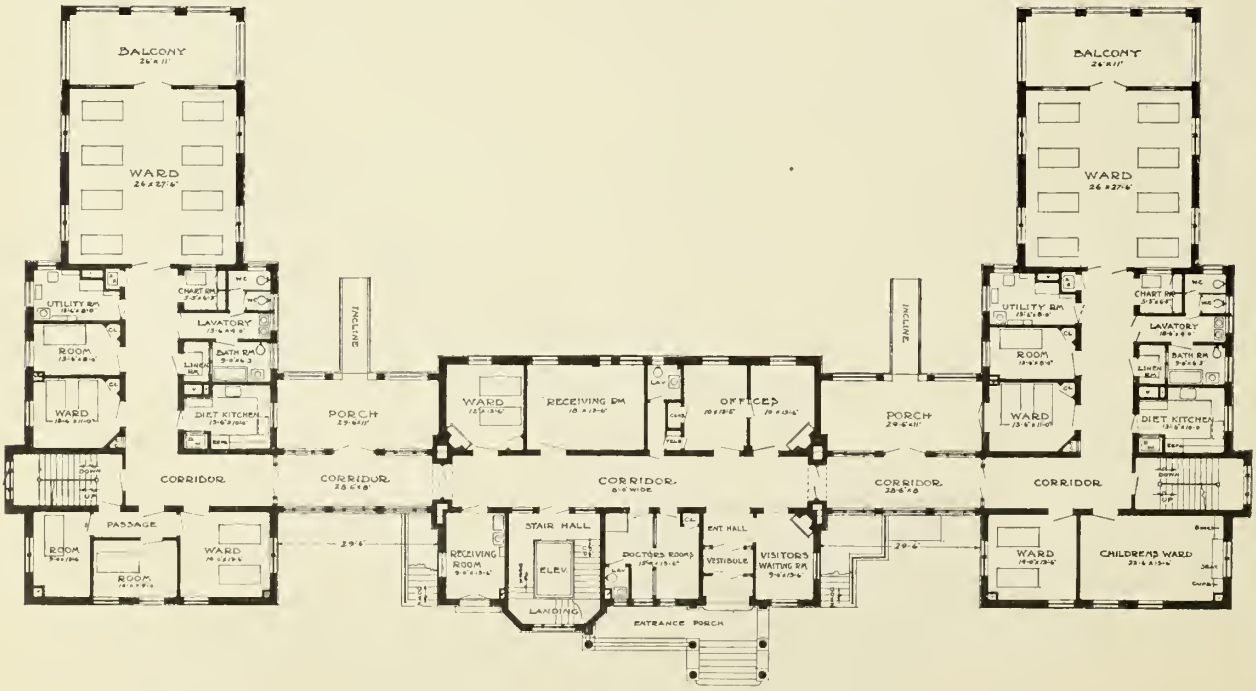


Fig. 4. Ithaca City Hospital. First floor plan.

forty doctors in the city of Ithaca, not counting those in the surrounding towns, the problem of competent service to all presents itself.

The men's and children's wards occupy one wing of the main floor, the maternity floor occupies the opposite wing, while the second floor is

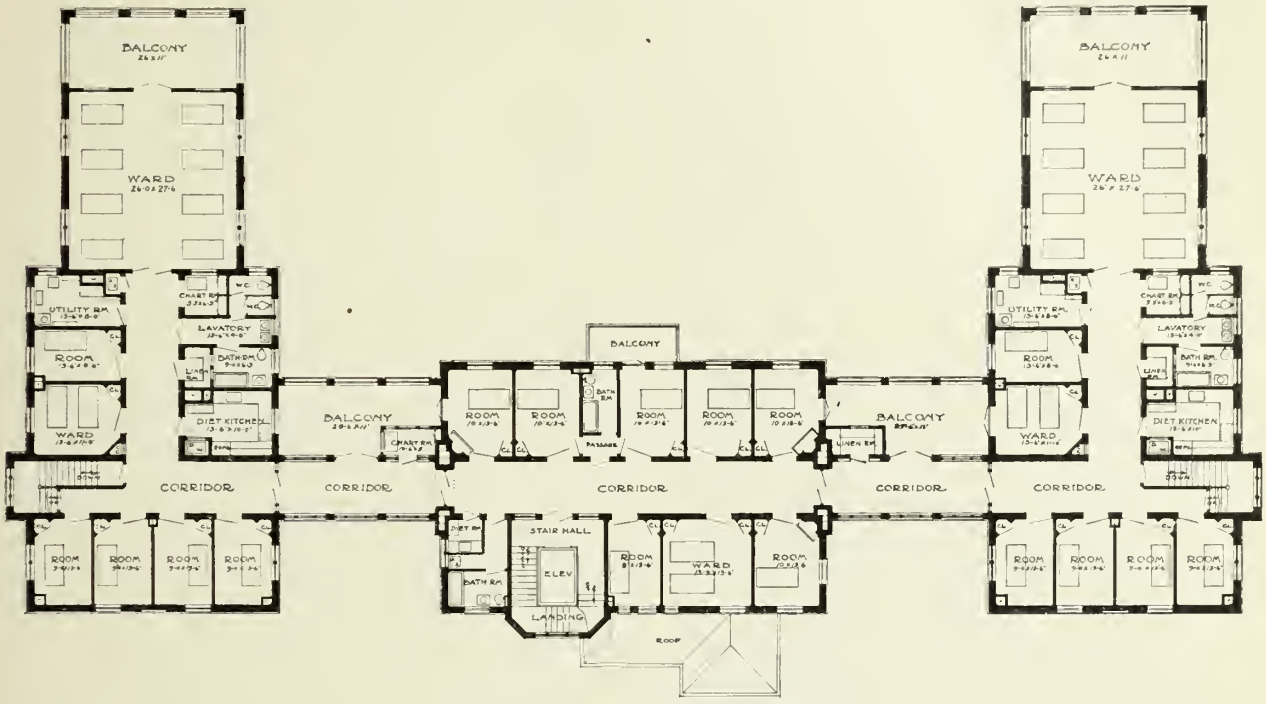


Fig. 5. Ithaca City Hospital. Second floor plan.

divided into medical, unclean surgical, and clean surgical for women. The maternity service is active, the medical experience varied, the children's ward busy, but the surgical work alone quite overbalances the rest for a hospital of its size. Last year we averaged about eighty operations a month.

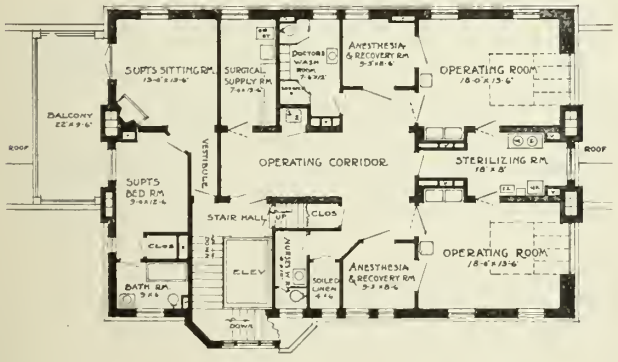


Fig. 6. Ithaca City Hospital. Third floor plan.

Our x-ray work is quite a feature. The rooms have, however, the objection of being placed in the basement instead of on the main floor. All plates are left on file for future reference.

The hospital has a training school of twenty pupils. There are six graduates employed as supervising nurses in addition to the superintendent of nurses.

The hospital ward rates are $1.50 a day on the medical and surgical floors and $2 a day in maternity. The private room prices range from $2.25 to $4 a day. Our operating room fees are $3 for minor and $5 for major operations, and $5 for delivery fee. The last annual report covered the first complete year in the new hospital. Our daily average of patients was 51, with the average cost per day per patient of $2.21.

The word hospital, whose root is Latin, is of quite modern origin in the sense of nosocomium. Mr. Pointe tells us, in fact, that the Hôtel Dieu of Lyons, founded about the year 542, and which received, like the institutions of the Orient, poor persons, orphans, sick, and pilgrims, is called "xenodochium" in the acts of the fifth council of Orleans, held in 549. The word hospital was originally used in the sense of its root "hospes," "*hospitalium*," and it served to designate all the establishments devoted to hospitality, whatever might be the position or motives of the host, "hospes," or of those who sought this hospitality.—Felix Roubaud.

One ecclesiastical organization stands preeminent in the history of the world's good deeds. The Knights Hospitallers, Knights of St. John of Jerusalem, of Rhodes, and of Malta, as they were called at different periods, deserve special notice. They were men of the noblest families, who voluntarily renounced the world and its pleasures, gave up their wealth, and took an oath, among others, "to be chivalrous to women, to remain celibates, to succor the needy, and to minister to the sick." Their first hospital was built in the ninth century at Sienna.—Richard Dalton.

# THE HOSPITAL LABORATORY—ITS PURPOSES AND METHODS[1]

## Most Important Factor in the Institution for Determining Results of Treatment—Some Trustees Think More of a Low Budget Than of Low Mortality—Difference Between Research and Clinical Laboratory

By RICHARD M. PEARCE, M. D., Philadelphia

YOU have asked me to speak on the subject of the hospital laboratory, its functions, its scope of usefulness, and its relation to the other activities of the hospital. I do this with pleasure, for I have always had the greatest interest in the development of hospital laboratories, and at the same time a deep and abiding sympathy, often akin to pity, for the men who are working under adverse conditions of equipment in many of such laboratories.

As these remarks imply that I may, later, make some adverse criticism of the indifferent attitude not infrequently shown by hospital trustees to the work of the laboratory, I hasten to assure you that I do not approach my subject as an academic teacher or investigator who, without hospital experience, attempts to bring the ideals of the university research laboratory into the practical every-day affairs of the hospital, but as one who has served his apprenticeship in hospital laboratory service and has always maintained an intimate relation to the laboratory problems of the hospital.

It was my good fortune to begin my work as a pathologist in the laboratory, then the new laboratory and at the time a model to all other hospitals, of the Boston City Hospital. This was the time, nearly twenty years ago, when the hospital laboratory, in this country at least, was emerging from the dark holes under the stairway, the little dark room off the morgue, or the dark, damp corner in the cellar—spaces that no one else wanted and that the hospital superintendent couldn't utilize for storage space—to find its place in the sun.

In those early days in our new laboratory at the Boston City Hospital I became interested in the problems, not only of laboratory management, but of how the laboratory could be utilized for the benefit of the patient, the hospital, and the community—an interest which has continued in connection with other hospitals, private, municipal, and university, with which I have since been associated officially in the cities of Boston, Albany, New York, and Philadelphia. I mention these personal experiences only for the purpose of impressing on you the fact that whatever suggestions or criticisms I may offer tonight are made, not in a spirit of academic aloofness from the practical affairs of the hospital laboratory, but, on the other hand, with a first-hand practical knowledge of its needs, its possibilities, and its proper functions.

Before taking up the functions of the hospital laboratory in detail, I would like to recall to your mind the historical beginnings of the so-called clinical or hospital laboratory.

The early efforts which led eventually to the establishment of the clinical laboratory were the founding of the laboratories for the medical sciences. With two exceptions—the founding of the first laboratory for physiology by Pürkinje at Breslau in 1824, and that for organic chemistry by Liebig at Giessen in 1825, all scientific medical laboratories—if we exclude those for dissection, have been founded since 1850; thus, Virchow's laboratory of pathology at Berlin in 1856, that of Buchheim for pharmacology at Dorpat at about the same time, that of Hoppe-Seyler for physiological chemistry in 1872 at Strassburg, and that of Pettenkoffer for hygiene at Munich in 1878. I mention these few historical facts to recall to your attention how recent, relatively speaking, is the development of scientific medicine. The early laboratories were, for the most part, concerned with the fundamental medical sciences, but the discoveries made in them had such a direct bearing on the practice of medicine that the laboratory for the hospital inevitably followed.

The first clinical laboratory as an integral part of a hospital, thus recognizing a definite phase of hospital effort, was established by Ziemssen in Munich about 1886; a similar laboratory was established by Curschmann at Leipzig in 1892. The first clinical laboratory with its own building in this country was the William Pepper Laboratory of Clinical Medicine in connection with the University Hospital of this city, opened in 1895. Now, I do not mean to say that laboratory work was not done in hospitals before this time; it was, but in the out-of-the-way corners, the cellar, the attic, or the post-mortem room to which I have earlier referred, and which any of you who remember the hospital of twenty-five years ago can recall. A very few hospitals had something better, but a clinical laboratory in the sense in which we use the term today did not exist. What important events or discoveries brought about this change in

[1]Address before the Presbyterian Hospital Association of Philadelphia, December 14, 1915.

the attitude of the physician and the surgeon and led to the establishment of the hospital laboratory as a definite department of the hospital?

Twenty-five years ago the laboratory activities of the average hospital were practically limited, on the one hand, to those concerned with the examination of the urine, as the test for albumin, the search for casts, and the rough estimation of urea, and, on the other hand, to the microscopic examination of tumors after operation. Indeed, much of the latter was not done in the hospital, but by special arrangement in the laboratories of medical schools. The early development of pathologic histology as a phase of hospital effort we can trace to two factors—the great increase in surgical operations following the introduction and general use of ether anesthesia (inaugurated in 1846, but not in general use until after the Civil War), and the influence of the spread of Virchow's teachings and discoveries.

This rapid development of pathology, a truly remarkable advance, was of the greatest importance to medicine. The examination of dead material, both from the post-mortem room and from the operating table, influenced medicine fundamentally in that it established the anatomical basis—the cellular theory—of disease and thus gave a rational basis to medical diagnosis. It is to pathology, therefore, that we owe the first expansion of the territory covered by the hospital laboratory; but the discoveries responsible for modern hospital laboratory effort—in that they established methods of exact diagnosis in the living—came from the laboratories dealing with living rather than dead material, and, as these discoveries became generally known, hospital laboratories were forced to further expand beyond the urine-examination and section-cutting period of development in order to care for methods and activities which may well be described as those of applied biology. One of the earliest of these discoveries was Lister's practical application of Pasteur's laboratory efforts in the establishment of aseptic surgery. The importance of Lister's work was not immediately recognized—announced in 1867, it was not until 1883 that it was generally accepted.

In the meantime, however, the rapid progress in bacteriology demonstrated the need of utilizing the methods of this science in the hospital laboratory, not only to aid the surgeon in diagnosis, but to control, for the sake of the patient, his technic. The discovery in rapid succession of the bacteria causing glanders and tuberculosis (1882), of cholera (1883), and of diphtheria and tetanus (1884), coupled with the knowledge of the relation of protozoa to dysentery and to malaria, immediately focused the attention of the world on the problems of exact etiology and therefore of diagnosis, and physicians hastened to introduce bacteriological methods in hospital laboratories. Somewhat later, in the early nineties, Ehrlich's study of the blood cells led to the classification and methods of enumeration on which are based our modern methods of the diagnosis of diseases of the blood.

The necessity of the hospital laboratory was no longer a matter of doubt. It was no longer a question of providing merely for the routine examination of urine. The sciences of bacteriology and hematology placed in the hands of the physician methods of diagnosis which he could not ignore if he were to give the patients in the wards the same consideration he gave to the patients in his private practice. Trustees saw the light and fell into line, and we find that since about 1895 the hospital laboratory begins to take its proper place in the scheme of hospital organization; and, with new discoveries in the fields of immunology and physiological chemistry, its expansion continues and doubtless will continue indefinitely.

The hospital laboratory has three functions:

1. To aid in the diagnosis, and therefore the intelligent treatment of disease.

2. To investigate new methods of diagnosis and treatment, and put them into use with the least possible delay.

3. To advance, by investigation, our knowledge of the cause, course, diagnosis, and treatment of disease.

When a laboratory conscientiously serves these three functions, and only when it does, is it doing its share to help the larger organization—the hospital—to fulfill its function. The function of a hospital is threefold, and, as might be expected, the properly conducted laboratory helps the hospital in each of its three duties. I think we will all agree that the duties of the modern hospital are:

1. To cure or relieve suffering humanity.

2. To train men who are to practice medicine.

3. To advance our knowledge of medicine by research.

In connection with the first of these the laboratory does its share by contributing to exact and immediate diagnosis, and also in these days of the widespread use of biological products it aids also in methods of treatment.

In the second function—that of training physicians—the work of the laboratory is analogous to that of the ward in that the methods used in the laboratory become the property of the staff and interns to the same extent as do methods learned in the wards.

As to the third function—research—both ward and laboratory should have the common aim of advancing our knowledge of disease by investigation.

It is evident, therefore, that the laboratory has the same general purpose as has the hospital at large, and it must further be evident that if the three lines of effort, as I have summarized them, are conscientiously followed, the laboratory becomes, in many instances, the most essential part of the hospital, for without it appropriate treatment—which depends solely on accurate diagnosis—is frequently impossible.

The first function—the work of the laboratory as a diagnostic aid—is naturally its most important function. In the past twenty years most hospital laboratories have practiced, as a matter of routine, the more definitely specific means of diagnosis—the simple chemical and microscopic examination of the urine, stomach contents, and other body fluids, the detection microscopically of the causative agents of disease, and the morphologic methods of blood examination. Other methods, particularly those of immunology, as the Widal reaction and the Wassermann reaction, have been added as their importance has been demonstrated. These may be called the staple diagnostic methods of the hospital laboratory which concern large groups of cases, and, by so characterizing them, I have no desire to belittle their importance. They are essential and must form the great bulk of the work of every hospital laboratory, but as I have watched the work of hospital laboratories, particularly those not connected with medical schools, I have gained the impression that expansion beyond these routine methods is not encouraged by either clinical or laboratory staff. There is little tendency to investigate, either for diagnostic or therapeutic purposes, the individual cases and to use the less common methods, or, perhaps better, the less specific methods of attack. This is particularly true of the methods of physiological chemistry, which are of such great value in the field of chronic and metabolic disease.

How seldom are patients in the hospital with suspected acidosis studied day by day in a chemical sense! The acidosis of diabetes, of cyclical vomiting of children, and of other related conditions is peculiarly a problem in the field of the hospital laboratory, but seldom is the work undertaken even from the point of view of judging of the efficacy of treatment. With some forms of treatment—as, for example, Allen's new treatment for diabetes—the benefit of treatment to the patient and the length of time treatment should be continued can be determined only by daily study of the total amounts of sugar and ketones in the urine. The same argument applies to cyclical vomiting in children, for in some types of this disease acidosis is not present, and the determination of this fact is essential to rational therapy. Again, in nephritis, gout, and the various affections described as rheumatic, metabolic studies are of the greatest practical importance in determining the character of the treatment and in judging of its benefits.

In hospitals belonging to or affiliated with medical schools much of this border-line work is done in the school laboratories, but in the independent hospital, cut off from such assistance, the patients fail to secure these very important aids to diagnosis and treatment. Because of the lack of such help from school laboratories, the independent hospital should have a laboratory more thoroughly equipped and more all-embracing in its activities than the school hospital. This we find not to be the case. Despite its isolation, which should stimulate it to greater effort in behalf of its patients, we find that the independent hospital, with a few exceptions, has laboratories far inferior, as regards equipment, staff, and ideals, to those of hospitals connected with educational institutions. That this should be the case is a sad commentary on the hard-headed business men who serve on most of our hospital boards. Hospitals, and especially those catering to private patients, cannot afford indifferent equipment. As medicine becomes more and more popularized, laymen are becoming familiar with the great value of laboratory methods in the diagnosis of disease, and their choice of a hospital is often dependent on the reputation of the laboratory of that hospital as an aid in exact diagnosis. In this connection I may add that I believe it is not a bad thing for the hospital laboratory to have a distinctive name. I believe the Ayer laboratory has enhanced wonderfully the prestige of the Pennsylvania Hospital in that the distinctive name has advertised to the public the fact that the Pennsylvania Hospital has a separate building devoted exclusively to the study of disease by laboratory methods and thereby neglects no aid to diagnosis.

Now, a word or two as to the second duty of the hospital laboratory—that is, the immediate testing out and application of new methods which may be of benefit in diagnosis or treatment. There is, as far as my observations may be taken as a criterion, a lamentable tendency to wait for some one else to do it. I do not mean, if a new parasite were announced as the cause—for example, of leukemia—that search for this organism would not at once be made in the blood of such patients suffering from leukemia as happened to be in the

wards, or that a new method of isolating the tubercle bacillus from urine or feces might not be tried at once. These procedures would require only the simple methods for the application of which the routine equipment of the laboratory suffice; but, if the new method announced is a little out of the ordinary, or requires new equipment or material, the procedure is left to the academic teaching and research laboratories until, after it is proved of undoubted value by them, the hospital laboratory is forced in self-defense to adopt it. As an illustration, I may quote the experience of the department of which I have had charge during the past five years. It is essentially a department for research only, and particularly for research in connection with the chronic diseases. We are not expected to teach, to do diagnostic work, or to try out new methods, except as an aid to further research. It has, however, in these past years been my experience to find announced new methods of recognizing disturbances of function in the chronic diseases, and to my amazement to learn that no hospital laboratory in the city of Philadelphia was attempting to test their applicability in appropriate cases. The probable great importance of some of these procedures—as Rowntree's phthalein test for renal function, the estimation of nonprotein nitrogen in the blood by Folin's method, the tetrachlorphthalein test for liver function, the Abderhalden test for pregnancy, the use of the Crehore micrograph for studying vascular disease —led us, in view of our knowledge of the dilatory methods of the hospital laboratories, to test these methods both on animals and man in order to force them on the attention of the hospital laboratories at the earliest possible moment. And I do not exaggerate when I say that some of these procedures were not taken up by hospital laboratories until we had completed our investigation and urged that they be applied as a more or less routine procedure of hospital work.

Now, it may be a very nice arrangement to have a research laboratory work out the availability of clinical tests for the hospital, but it is not the duty of the research laboratory and it is most decidedly the duty of the hospital laboratory. To put it mildly, our attitude may be altruistic, but, if it is, then the attitude of the hospital laboratory must be described as nonprogressive in the development of clinical laboratory methods and as indifferent to the best interests of its patients. The causes of this unprogressive attitude of the average hospital laboratory are, I believe, two-fold—first, an insufficient, underpaid, and overworked staff, and, second, the rigid restrictions imposed by the trustees on the budget for running expenses. Under such circumstances the staff becomes indifferent to all but the veriest routine of the simple and tried methods of diagnosis, and has no incentive to examine the newer methods and try them out, and, even if occasionally an ambitious worker is fired with a desire to master a new method which requires some unusual expenditure for apparatus, chemicals, or other equipment, he is deterred by the restrictions of the budget. One sometimes wonders if a slight saving in the budget is not more important in the eyes of the trustees than a slight reduction in the hospital mortality figures. I personally believe that the most important single factor in determining the results of treatment is the hospital laboratory. The aid which a properly conducted laboratory can give in determining the cause and stage or course of a disease process, and thereby influence treatment, makes all the difference between the percentage of patients discharged "dead" or "not improved" and the percentage of those discharged "relieved" or "cured."

Some day a hospital statistician will take up this hypothesis, and, by contrasting two hospitals with clinical staffs of equal training and brilliance, but in one an up-to-date laboratory and in the other a mediocre laboratory, will offer a mathematical demonstration of the influence which the laboratory has on the end results of treatment, and will thus give to hospital trustees the argument they need to obtain for the hospital laboratory adequate funds, not only for thorough routine work, but sufficient also to allow the staff to investigate and apply, either experimentally or practically, any new method of diagnosis or treatment, and thus assure to the laboratory one of its higher functions in the scheme of hospital organization.

As to my third proposition—research in the hospital laboratory—I hesitate to lay down any hard and fast rules. In the hospitals of educational institutions, as also in those merely affiliated with such, research is a function of the laboratory as a matter of course; without it the hospital would stagnate and it would fail to attract the best men to serve it—progress would cease, and the result would be felt both by the patient who sought it for relief from suffering and the student using its facilities for his own training. Certainly the independent hospital, which cannot command the assistance and advice of a teaching laboratory staff as can the school hospital laboratory, should not undertake fundamental researches unless its fields of diagnostic effort and of the study of new methods, which I have discussed, are successfully and thoroughly cared for. By fundamental researches I mean the breaking of absolutely new ground and the trying of new paths into the territory of the unknown. It is better to leave such efforts to the academic laboratories or to such re-

search institutions as control hospitals for the prosecution of this work. There is, however, a middle ground of research for the hospital laboratory, and, although it may not yield the brilliant results of original investigation in new fields, it is, in that it concerns the welfare of the individual patient, of the greatest importance to the progress and development of the hospital. I refer to the working out—after a new method has been described, or a new fundamental principle announced, or a new treatment suggested—of the details of its application to the fundamental problem with which it is concerned, with, if possible, its extension to other fields.

I can best illustrate what I mean by a problem in which I am now interested. Folin late in the past summer described a method by which, for the first time, it is possible to estimate quantitatively the elimination of phenols in the urine. This method, the technic of which is very simple, offers for the first time an opportunity to settle the vexed problem of intestinal putrefaction, or autointoxication, as it is commonly called. It is obviously a method that every hospital laboratory should take up at once, for it is in the hospital that these cases—the various types of gastro-intestinal disturbance in which increased phenol formation presumably develops, as well as cases with those types of liver disease which are supposed to interfere with the detoxication of the phenols—are to be found in abundance. Folin published, with his description of the method, an account of its application in a group of clinical cases, but the number is so small that definite opinion concerning phenol formation and elimination in various diseases is as yet impossible. Only by massing the results of the study of large groups of cases can an opinion be reached quickly, and in this every hospital laboratory could aid by contributing its share of observations. This type of research is the legitimate field of the hospital laboratory, for the hospital controls the necessary material for study, and by doing work of this type is immediately benefiting its patients.

Folin himself offers, perhaps, an excellent example of what an independent hospital laboratory can do to advance medical research. Some years ago, when connected with the hospital for the insane at Waverly, Mass., he found the methods of determining quantitatively the various constituents of the urine to be inadequate and faulty, as was also our knowledge of the normal quantitative elimination of these substances. He, therefore, started a series of investigations, as part of the routine work of his laboratory, that has given to us many new methods and new facts of the greatest importance in the study of diseases, especially chronic diseases, characterized by disturbances of metabolism. One may say, if a slangy allusion is allowable, that it was this work that put, not only the McLean Hospital, but the town of Waverly itself, on the map of scientific medicine. One could elaborate on this thought—the indirect value of the publication of researches as an advertisement of the hospital—but this phase of the subject must be very evident to everyone.

Another triumph of a hospital laboratory, and in this case again the laboratory of an independent hospital, that I like to think of, not only as an example of what a hospital can do in the way of research, but also as an example of work of direct humane value, is the investigation in the Mount Sinai Hospital of New York city of the methods of blood transfusion. Although the fundamental principles of the modern method of blood transfusion were established by the blood vessel suture work of Carrel and the use of the metal cannulas of Crile, many details of the practical application had to be worked out by those using the procedure on patients. These details demanded work on the choice of methods and of connecting apparatus, on substances which would prevent coagulation, and on the problem of testing the blood of the donor for agglutinating and hemolyzing qualities. These details, moreover, involved the intimate co-operation of surgeon and clinician on the one hand and of the laboratory on the other. It was on this basis that the problem was attacked at Mount Sinai. As recently reported by Ottenberg and Libman, the details of these problems have been worked out to the satisfaction of the Mount Sinai group, and, what is most impressive, has resulted in twenty-eight instances in the saving of life and in thirteen instances in the prolongation of life. Not only has this laboratory made a contribution of great value to medical research and technic, but in the course of the work a group of men has been trained to carry out the procedure without delay or difficulty whenever necessity arises.

It must be clear to you, from what I have said and from the examples I have given, that the independent hospital laboratory has a distinct field of research, which does not conflict, on the one hand, with the teaching and research laboratories devoted to the fundamental medical sciences, or, on the other hand, with the large well-endowed research hospitals which attack clinical problems on a large scale. Its field is the detailed study of disease in the living by the application of old and new methods, with the object of accumulating a mass of facts that will settle many of the obscure points of organic disease. I like to think of this work with the living, by the methods of physics and chemistry, as analogous to the work of the

clinicians and pathologists who followed Virchow's teachings. By applying morphological principles in the study of the dead and using the numerical method of Louis in the living, they settled the fundamental problems of pathological anatomy, and on the foundation thus laid they based the modern principles of the scientific diagnosis of disease. Today, with the newer methods of studying normal and altered functions, the numerical method may still be applied to the living by the use of the methods of physics and chemistry, and thus supplement the gains already made by pathology, and give us eventually, not only scientific diagnosis, but also adequate therapy. And it is to these methods and to the hospital laboratory that medicine looks for an advance in our knowledge of the chronic, so-called degenerative diseases that shall be commensurate with the advance made during the past thirty years in the acute infectious diseases. The great increase in our knowledge of the acute infectious diseases has led to a more or less definite standardization of the methods of recognizing and treating such, but progress in the chronic diseases, characterized by disturbances of the physiology and chemistry of the body and without definite etiology, has been slow and uncertain. As most of these diseases cannot be reproduced in animals, they cannot be studied in the purely research laboratory. Their study is necessarily the joint work of the clinic and the hospital laboratory, and its duty in this regard the hospital cannot honestly escape if it desires to exert its greatest influence for good in the community.

There is one other question which might be presented at this time, and that is the expense of developing a laboratory along the lines I have suggested. This may, if it is desired, be brought out in discussion. This much, however, may be said: it is easier to raise money on the basis of present achievement than on that of promise for the future. It is easier to raise money today for research than for any other activity in the field of medicine. And I, therefore, confidently believe that the hospital which can point to achievement along the lines I have suggested—laboratory diagnosis, the testing of new methods, and modest, but profitable, research in certain types of disease—can, by pointing out the benefits which have thereby resulted in favor of the patient, and thus, in improving for the benefit of its community, the service of the hospital, obtain all the funds any laboratory may desire. But the hospital laboratory must demonstrate first that it is more than a place for mere routine diagnosis by old and tried methods. It must play its part in the social system. It must decide that it is not sufficient alone to treat disease and relieve suffering, but that it must do its share in properly educating physicians and in solving the problems of the community which relate to disease. These problems cannot be left alone to those who study disease in academic laboratories at second hand, but do not treat it in the hospital.

There is a gradually awakening public opinion that medicine should take a more prominent part in the affairs of the community. The science of bacteriology and the knowledge which it has popularized concerning the etiology and control of disease and pestilence, formerly considered foreordained and without remedy, has brought to the race a new hope concerning many of man's afflictions, and this hope is tinctured with an impatient demand that all preventable diseases, whether due to infection or occupation, should be thoroughly investigated. The public looks first, and naturally so, to its state and municipal laboratories, and it looks also to the laboratories and hospitals of its universities and of the great research institutions for help in these matters. Why does not the independent hospital play a prominent part in this phase of public service? I believe the answer lies in the fact that, with very few exceptions, the trustees of independent hospitals consistently and blindly neglect the laboratory and the research side of hospital effort, and have no conception of the real value, to the hospital and the community, of the hospital laboratory as a factor in the elucidation of the problems of disease.

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The Romans had no real military hospitals until the time of the emperors, as Hyginus tells us in his work, "De munitione castrorum." They were under the supervision of the commanding officer, and had surgeons, administrative officers, and male nurses. It is probable that these military hospitals were established chiefly in permanent camps and garrisons on the frontiers of the empire. At Baden, near Zürich (Switzerland), were found the remains of such an old Roman military hospital, together with a complete pharmacy, surgical instruments, etc. It dates back to the time of the Emperors Claudius or Nero, and is the first hospital of Roman time which has been rendered accessible to the civilization of today.

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It is not necessary, or probably not desirable, that every case of the ordinary infectious disease should be removed to the hospital. If the patient has proper lodging and accommodation at his home, and is able to procure suitable food, medical attendance, and good nursing, and if there are no susceptible persons to be endangered, or he can be effectually isolated from the rest of the household, except those in attendance on him, his removal to the hospital is not required on grounds of public health, though even in such cases it may be desired by the householder on grounds of convenience.—Franklin Parsons.

## STUDY OF THE PLANS FOR A LARGE MODERN HOSPITAL

### Intended to Meet the Requirements of University Teaching, and at the Same Time to Fulfill the Necessities of Hygiene and Sanitation for Patients, and the Centralization of Administration

By SAMUEL LAMBERT, M. D., Dean of the College of Physicians and Surgeons, Columbia University

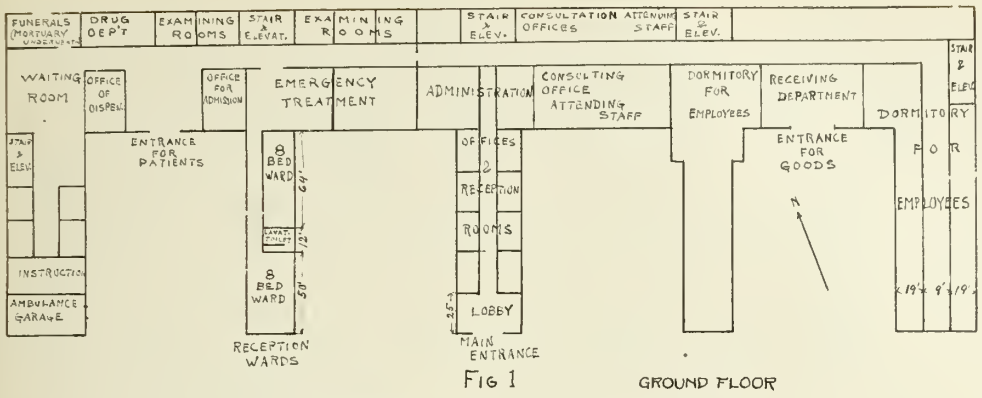
THE present paper on hospital construction is suggested by three principal considerations: first, by the present interest of Columbia University in the rebuilding of the Presbyterian Hospital, which has become by an alliance between the two corporations the University hospital of Columbia's medical school, the College of Physicians and Surgeons; second, by the desire to develop the general plans for hospital construction which were suggested in a pamphlet on the ideal development of hospital and medical school, privately printed last spring; and third, by the wish to formulate a solution for New York of the theoretical conditions of hospital construction which are accepted by the authoritative writers on this subject.

It is thought not to be desirable to neglect in this paper a consideration of the problems involved in a rebuilding of the Presbyterian Hospital, and the plans developed below are those of a large general hospital, to include departments of medicine, of surgery and of the medical specialties, to include a department of pathology, with special application to every clinical department, to include a large out-patient dispensary service, and finally to provide adequate facilities for teaching and for medical research.

Such a complete hospital combination has never up to the present time been built. The development of most university schools which have clinical plants in medical specialties has been on the basis of adding a separate hospital unit for each specialty represented. The most complete of such aggregations of clinics are to be found in Europe, and represent especially the German ideal. Such special clinics are essential for advanced or post-graduate teaching in any specialty and for any teaching in such specialties as obstetrics, orthopedic surgery, and psychiatry. In these specialties such individualized work as the care of new-born infants or the fitting and making of mechanical apparatus forms a large part, and the addition of sufficient space to equip such clinics would add very materially to the size of a general hospital. There is no theoretical reason why such cases should not be cared for in the same group of buildings with other patients. They are omitted in the following plans solely because of the practical reason that they demand so much space, but an attempt has been made to include enough of all other important specialties of medicine to give sufficient instruction to provide a broad foundation in them to all undergraduates and to afford the heads of departments all reasonable facility for study and research. Another omission will also be noted—no room has been planned for a nurses' home. It is believed that the nursing staff is better cared for in an isolated building. Quarters for the nurses could be added to any block hospital plan by the addition of a whole story devoted to that purpose if such a solution of this important question be thought desirable.

In developing the hospital plan suggested last spring in more minuteness, reference has been made to the pamphlet on this general subject already referred to, and also free use has been made of the report of a special committee of members of the medical faculty in which a detailed designation of hospital space was suggested for the departments of medicine, surgery, and pathology. The hospital here planned is not to be considered as a proposal for the new Presbyterian Hospital—in fact, it will not fit on the site already selected for that new building—but if the general considerations presented below are valid suggestions for the construction of hospitals in New York city, neither the Presbyterian Hospital nor any other similar institution can afford to neglect a study of them or can adopt any plan much at variance with this general ground layout. The street plan of New York limits the possibilities of hospital design very materially if the hygienic rules of hospital construction are to be fulfilled. Of all the hospitals which have been built in New York, none satisfies all these hygienic rules and some of these hospitals break most of them.

It is unfortunate that hospital construction cannot be considered chronologically in the nature of a progressive study, for some of the older hospital buildings are far better examples of healthy hospitals, to use Sir Douglas Galton's phrase, than are other institutions of more recent date. Some hospitals have built two series of buildings on an east and west axis on the New York city blocks of 200 feet north and south width, which has resulted in small dark courts between the buildings. Others have constructed wards for the accommodation of a dozen or more patients, into which the sun never shines. Some have built their wards with ample cubic space, but of such a shape that the number of beds planned for cannot be accom-

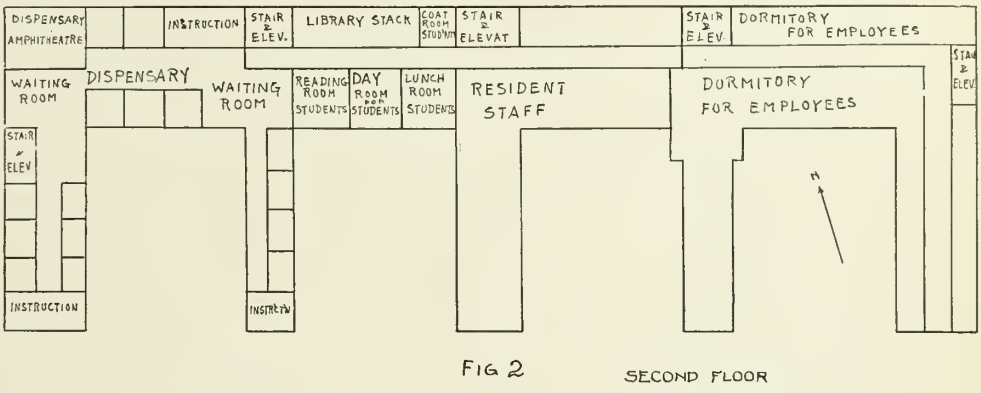



Dispensary—administration and receiving departments.

modated and at the same time permit the ordinary ward traffic necessary to care for the patients. Many have taken no means to prevent intercommunication between the ward units through stairways, elevators, and corridors. These hospitals have often been planned more to secure centralization in the housekeeping and administrative services than to serve the hygienic requirements of the patients in the wards.

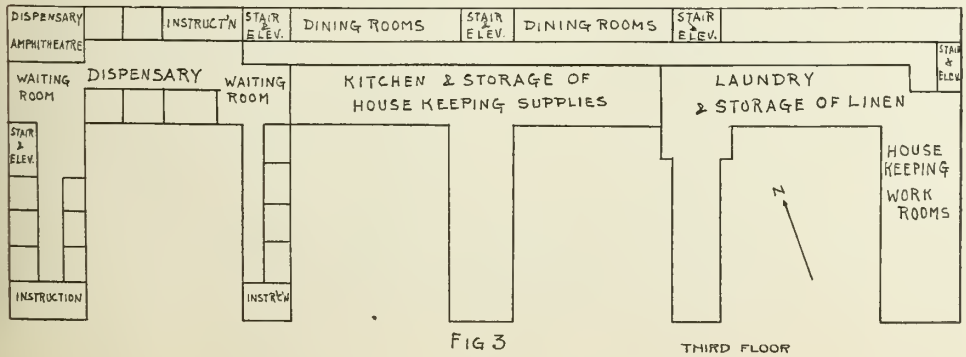
The hygienic rules which are so often broken are seemingly self-evident when expressed in straightforward terms, and it seems superfluous to formulate them. The difficulty seems often to be not that the general proposition is not understood, but that the builders of hospitals have not appreciated when and how even the simplest sanitary laws are being broken. These principles for building healthy hospitals have been presented in the general works on hospital construction by Burdette and Galton in England, by Oswald Kuhn writing as an architect, and by F. Ruppel writing on behalf of sanitary engineering in Germany. The two most recent presentations are offered from the medical point of view by Grober in Germany in his book on "Das deutsche Krankenhaus" and by Depage and others in French in a work entitled "La construction des hopitaux."

The following principles are prescribed by all these writers for the essential element of the hospital, the ward unit: There must be free access of sunlight and air. There must be freedom from dust and smoke, from dirt and noise. There must be protection from the east and north winds. There must be a good cross ventilation by means of the windows. Galton lays much stress on raising the wards above the ground level, which




Dispensary and living quarters for resident staff and employees.

opinion would logically be an argument against the conclusion of all the continental authorities that the single-story pavilion forms the only possible solution of this problem. The ward unit meets these requirements only when rectangular in shape, with its long axis north and south, with windows, preferably one to each bed, on its east and west or long sides, with no obstruction built on its south end, but with all its accessory apartments for service, for communication, and for teaching grouped about the northern extremity. The size of the rectangular ward is determined by the space required for two rows of beds arranged along the east




Dispensary—kitchens, laundry, and household departments.

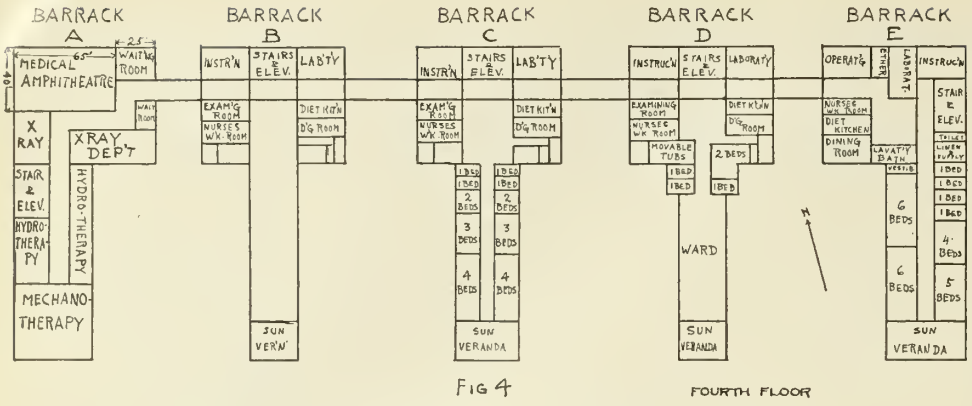



FIG 4

Special therapeutic departments, medical amphitheater, and wards.

and west walls, with the heads towards these outer walls. Each bed requires a minimum square surface 8 feet by 13½ feet; the 8 feet of ward length or wall space leaves 5 feet between beds and gives room for a chair and a bed table for each patient; the 13½ feet of ward width allows 1½ feet between the head of the bed and the wall and 12 feet between the beds as a central ward space for general ward tables, the necessary aisles for stretchers and service carts. The minimum width of such a ward is therefore 27 feet and its length in feet will be eight times the number of beds on each side; a ward of 20 beds will be 80 feet long, for example. The cubic space required per bed is variously estimated; Grober places it at 30 cubic meters. The most generally accepted height for large wards is 15 feet, and, taking this in computation with the length and breadth dimensions just given, it will be found that 1,680 cubic feet will be allotted to each patient bed. This is nearly twice the allowance suggested by Grober, but even so high an authority as Grober seems to have neglected the fact that the number of patients represents only a part of the census of a hospital ward. A ward of 24 beds requires six nurses, at least one ward maid or orderly, and in addition there should be added four clinical clerks in a teaching hospital. This would add 50 percent to the ward census without taking account of the more or less frequent visits of the attending and resident medical staff. The dimensions given for a hospital ward seem none too large, and far from any suspicion of extravagance of space when these conditions are considered.

Another and important point to be observed is the individual isolation of each ward unit from every other so far as the possibility of infection and disturbance in work is concerned. This hygienic decentralization is insisted on by all writers, and the continental authorities are unanimous that it can be secured in hospitals of over 300 beds only by building on the pavilion plan. Grober advises even for a pavilion hospital that the continuity of the few connecting corridors be broken at stated intervals. An antagonism exists

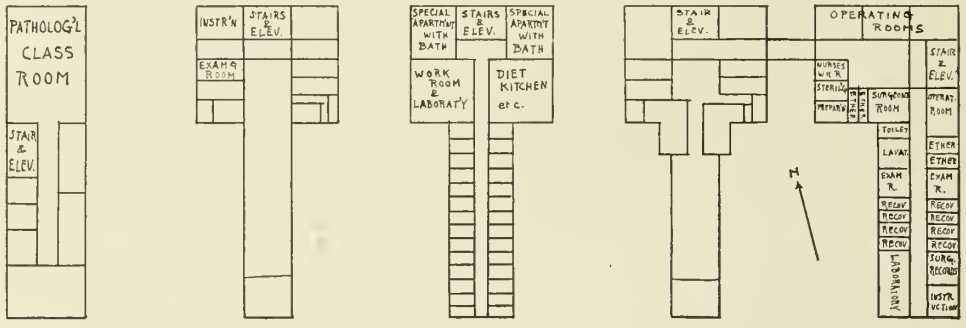



FIG. 5

Pathological department—surgical operating rooms and wards.

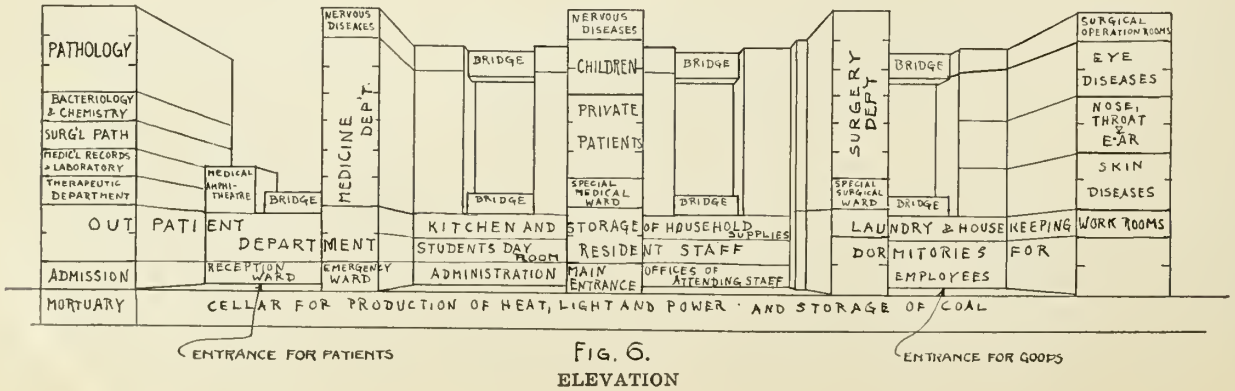



FIG. 6.
ELEVATION

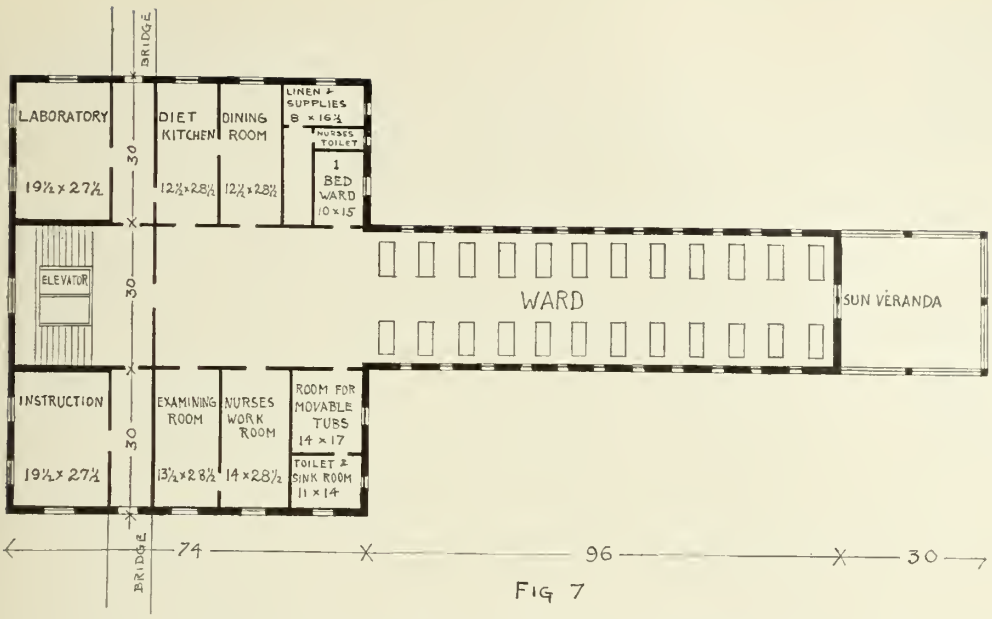



FIG 7

Ward unit of 24 beds and 1 isolation bed—pavilion of 30-foot width type.

has never been determined. Whatever may be the fact in Germany, neither of these dictums can be accepted as true today for American conditions and, therefore, as arguments for the pavilion hospital. So far as New York city is concerned, the controlling factor which is all powerful will be the cost of land, which alone will compel the adoption of tall, many-storied structures for metropolitan hospitals.

between the sanitary isolation required by the medical service and the service centralization demanded by the housekeeping and administration departments, In the plans developed in this paper it is believed that the necessary hygienic decentralization is secured without sacrificing the service centralization. This is done by planning for a ten-story fire-proof building to be constructed on the modern American system of steel girder support, which has made possible the present-day skyscraper. The pavilions are separated from those on the same level either entirely or are connected only by a single broken corridor along the north side of the site. The pavilions, which are superposed in the same "barrack," are connected by a staircase and elevator shaft also on the north side of the block, which is "broken" by a vestibule on each story. In maintaining his thesis in favor of the multiple one-story pavilion hospital as the only possible solution for building an institution to care for more than 300 patients, Grober makes the definite claim that vertical communication is more expensive and more difficult than is a system of service on one horizontal level. He also seems to favor man power as against mechanical appliances, although he admits that their relative cost

The plans of the hospital here suggested occupy a site 200 by 600 feet; this plot of ground is selected because it represents an average city block in New York. The street plan of New York is made up of streets 200 feet apart, running northwest and southeast, intersected at right angles by avenues at varying intervals, running northeast and southwest. The distances between the avenues vary between 960 feet and 400 feet or less. For such a hospital as is here contemplated no smaller plot of ground should be considered than an entire city block, which would insure air and light on all four sides. Such a site in New York, unless it has a public park on one side or is near one of the river fronts, is limited to a free surrounding space of 60 to 100 feet, which are the regular widths of the city streets. It is desirable, therefore, to build in a neighbor-

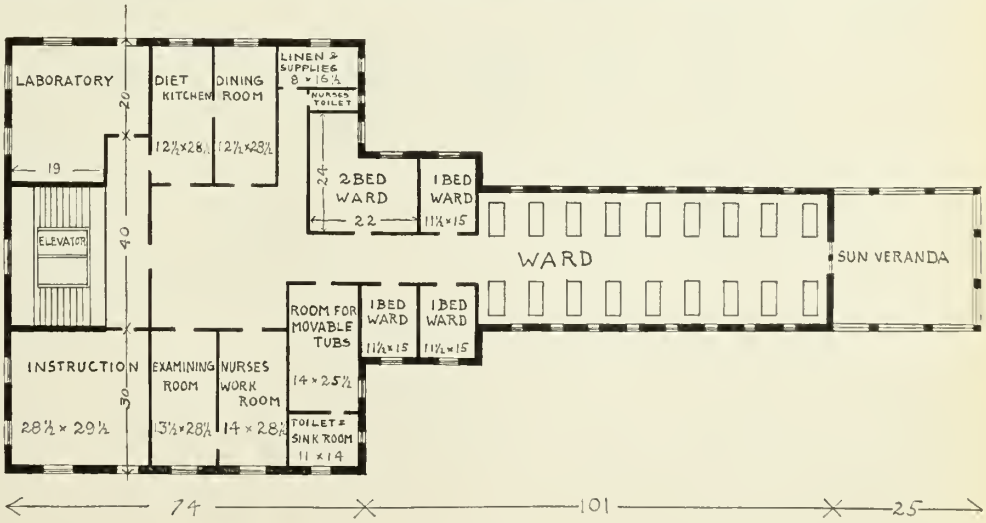



FIG. 8.

Ward unit of 18 beds and 5 isolation beds—pavilion of 30-foot width type.

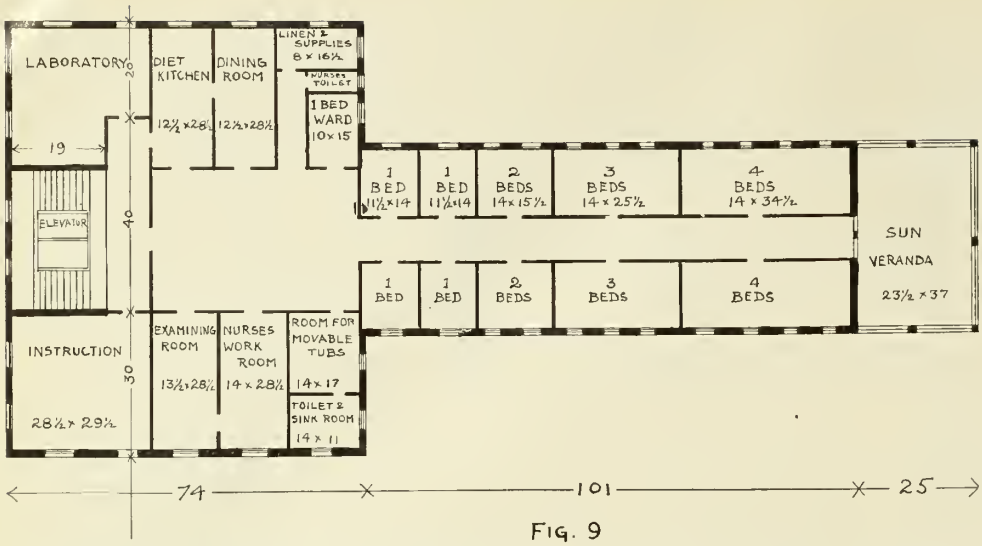



FIG. 9

Ward unit of 23 beds in small wards for children's services or similar services—pavilion of 40-foot width and corridor type.

hood where the surrounding buildings will not be excessively high. Of course such a condition cannot be guaranteed for all time, but the future can be guarded against to some extent by placing the wards in the upper stories. In the plan adopted, all the departments for administration, for housekeeping service, for dormitory uses are in the three lower stories of a ten-story building, and the wards occupy the seven upper stories. The wards are superposed and arranged in pavilions, and each ward forms a complete unit hygienically isolated as already described. Such a site, with a long axis in a general east and west direction and with a north and south width limited to 200 feet, is a necessity in New York. The limitations and difficulties arising from such a site have been emphasized by Doctor Goldwater in a series of thoughtful studies on this subject. Such a site fortunately allows of a long narrow building extending toward the south (actually southwest) to contain the ward units, and of a north main building to contain the accessory ward rooms, the connecting corridors, and the elevator and staircase shafts for intercommunication and service. The ward unit wings may be multiplied at fixed intervals from east and west, and the size of the hospital will be limited only by the length of the site and by the height of the building. Such a ward unit fulfills the theoretical requirements of a hygienic decentralization and secures as complete a service centralization as is possible in a building of its size. The adaptation of kitchen and laundry, of storage facilities and of dormitories, of the administration office, and of the out-patient dispensary to this floor plan, which is fixed by the unchangeable demands of the ward unit, is a question of detail planning of far less importance than that of the ward units and one which can be solved without serious difficulty or embarrassment. Such a plan meets all the requirements of a large, healthy hospital, and has been referred to in a previous paper as New York's contribution to the solution of the problem of hospital construction. In my opinion the hospitals of New York are to be deemed successes or not from the viewpoint of sanitary science in proportion as they approach this general ground plan in their construction.

In the plans of the several floors the amount of space devoted to each department is indicated with approximate accuracy, but no attempt has been made to develop each department in minute detail, except so far as the ward unit is concerned. The arrangements for each floor are as follows: The cellar contains the steam and electric plants for furnishing heat, light, and power, and for the

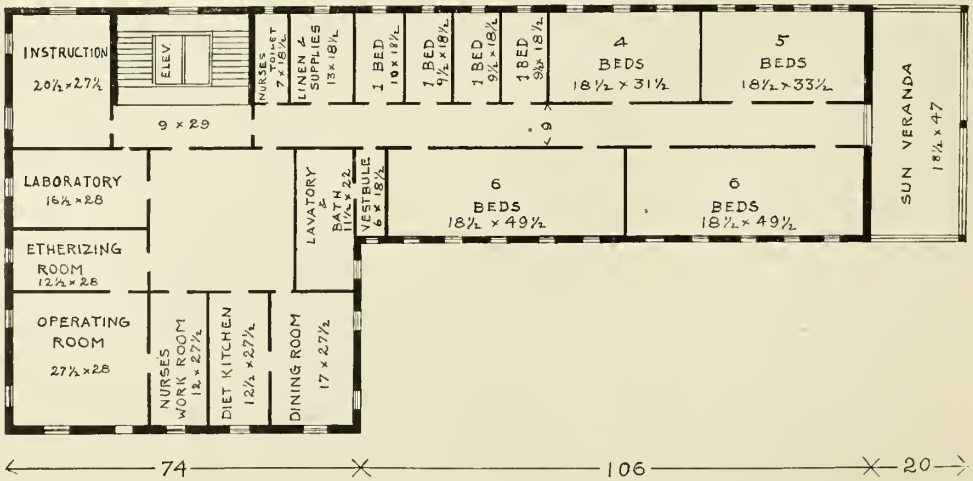

INSTRUCTION 20½ x 27½
ELEV
NURSES TOILET 7 x 18½
LINEN & SUPPLIES 13 x 18½
1 BED 10 x 18½
1 BED 9½ x 18½
1 BED 9½ x 18½
1 BED 9½ x 18½
4 BEDS 18½ x 31½
5 BEDS 18½ x 33½
SUN VERANDA 18½ x 47
9 x 29
9
LABORATORY 16½ x 28
ETHERIZING ROOM 12½ x 28
OPERATING ROOM 27½ x 28
NURSES WORK ROOM 12 x 27½
DIET KITCHEN 12½ x 27½
DINING ROOM 17 x 27½
LAVATORY & BATH 11½ x 22
VESTIBULE 6 x 18½
6 BEDS 18½ x 49½
6 BEDS 18½ x 49½
74
106
20

FIG 10

Ward unit of 25 beds in small wards, with operating room plant for service devoted to diseases of the nose, throat, and ear, and similar services—Pavilion of 50-food width and corridor type.

storage of coal. The cellar plan may be excavated on larger lines than those of the stories above, and light may be secured by ceiling openings in the several courts of the building. The first floor (Fig. 1) is given up to the admission department, with an emergency and reception ward in close connection with the first floor of the dispensary. The ambulance garage and offices for administration and the consulting office for the attending staff are also on this floor. The second floor (Fig. 2) has a part of the dispensary, day rooms for medical students, and dormitory space and living rooms for the resident staff and employees. The third floor (Fig. 3) contains the upper part of the dispensary and the household departments, including the laundry, kitchen, and dining rooms. The fourth floor (Fig. 4) is the lowest story devoted to permanent hospital residence. It and the stories above are made up of one barrack devoted to pathology and of four separated barrack buildings containing superposed ward unit pavilions, which are joined by bridges whenever necessary. In addition to certain wards, the fourth floor contains in barrack A a medical amphitheater and departments devoted to hydrotherapy, mechanotherapy, and radiographic work, which are of convenient access both from the dispensary and from the wards. In Fig. 4 the pavilions in barracks B and D are outlined as different types of ward units 30 feet in width. The pavilion in barrack C is depicted as a small corridor hospital of the medical type (e. g., diseases of children), and that in barrack E is shown as a corridor hospital for an operative surgical division (e. g., diseases of the eye). The fifth to the tenth floors (Fig. 5) inclusive are made up of four barracks, in which the superposed pavilions are devoted to wards, and one similar barrack building (barrack A) for the scientific specialties of pathology, with special floors devoted to surgical and to medical laboratories, including bacteriology and chemistry. The surgical operating rooms are on the top story (the tenth), of one barrack, and are shown in Fig. 5 (in barrack E). The pavilions in barracks B and D show the same detail as in Fig. 4, but the pavilion in barrack C is drawn to represent a ward unit devoted to the care of private patients.

In Fig. 6 an elevation shows the distribution of the departments viewing the hospital as a whole. The following points are worthy of emphasis: The medical department is grouped in one barrack building of seven superposed ward unit pavilions. The lower six can easily be administered as three service units of 50 beds each in accordance with the article on the organization of an American medical clinic by Professor Janeway printed in the June *Quarterly*. In addition, there is an amphitheater with medical laboratory in the neighboring barrack on one side and a series of rooms for the special study of individual cases in the next barrack on the other side. The surgical department is grouped in one similar pavilion barrack with seven stories. One ward unit can be devoted to special surgery and the remaining six should be divided into three service units as planned for the medical division. The operating rooms and accessories are grouped on the top story of a neighboring barrack and can be reached by a connecting bridge; the laboratories for surgical pathology are located in the pathological institute. The department for nervous diseases is made up of two ward unit pavilions in adjacent barracks joined by a bridge. This will permit of one large ward in one unit and of a series of single rooms in the other unit. Each of the specialties of eye, skin, nose, throat, and ear diseases and of diseases of children has assigned to it two superposed ward unit pavilions. There are three pavilions devoted to private patients which will accommodate about 66 patients. There is a single entrance for all patients, both in-patient and out-patient, whether they arrive on foot or by ambulance or other conveyance; a separate en-

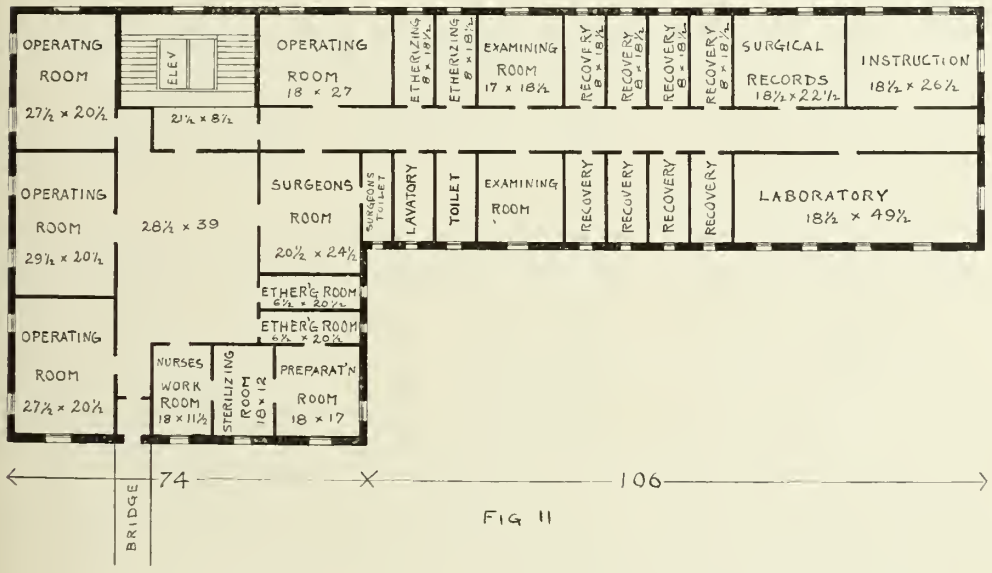



FIG 11

General surgical operating rooms and accessory apartments—pavilion of 50-foot width type.

trance for the reception of goods, and a main central entrance for private patients and the general public. The transportation of one patient from one pavilion barrack to another is facilitated by a continuous corridor along the whole series on the fourth floor and by connecting bridges and corridors on the topmost story, so that a patient may ascend when necessary in his own barrack and then proceed along the connecting corridor to the surgical operating room; or by descending similarly to the fourth floor a patient may reach the therapeutic plant for radiography or other similar study or treatment. In connection with every ward unit there is a sun veranda, which is situated at the south end of the ward, and each veranda is about 1,000 square feet in area. These balconies are an essential to all convalescent treatment and also for the care of some cases of acute disease. They are designed so that they cannot obstruct the access of light and air to the wards. The hospital will possess five flat roofs, which will furnish five very valuable adjuncts for the treatment of patients.

The remaining series of plans represents in detail and on a larger scale the several types of ward unit which are demanded by the varying widths of the pavilions. Fig. 7 shows the plan for a ward unit of the 30-foot width pavilion type, in which there is a main ward of 22 beds, with one isolating room and the necessary ward accessory rooms for linen storage, for lavatory, for diet kitchen and patients' dining room; also a nurses' work room and an examining room. This plan shows a connecting corridor running east and west, to the north of which there is a laboratory and a room for instruction and the shaft containing the stairs and elevators. In Fig. 8 a ward unit is shown of the 30-foot width type, in which there is a main ward of 18 beds and 5 beds for separate treatment, and in which there is no communication with the ward units on the same level. In Fig. 9 a ward unit of the 40-foot width type is shown. The accessory rooms are the same as before, but the 22 beds are arranged in the form of a small corridor hospital. This corridor plan permits the grouping in smaller wards of cases of various types, an arrangement which is desirable for the patients of a service devoted to medical specialties. Small wards can be arranged economically only on the corridor plan, and must lose the advantages of through cross ventilation and of an east and west daily exposure to the sunlight. In Fig. 10 a ward unit of the 50-foot width type is planned for a medical specialty, which is of an operative nature, such as diseases of the eye or those of the nose, throat, and ear. The arrangement of the wards in these 40- and 50-foot wide barracks is on the corridor system, which supplies small wards of 1 to 6 beds each. The accessory ward rooms are the same as before, with the addition of a small operating room plant, except that their arrangement on the plan is different.

The essential features of all these ward units are the isolation of the apartments devoted to the care of the sick from all direct communication with the stairs and with the elevator shafts and connecting corridors, and the securing at the same time of a close connection with the housekeeping departments. These requisites of a healthy hospital are attained for three distinct types of ward unit—distinct in detail, but really identical in their general conception. This consists of a long and comparatively narrow pavilion, with a north and south axis, having the accessory rooms and the means of communication grouped about the north ends of the wards. Much work would remain to be done in developing such a hospital plan before actual building could begin. Such details are beyond the scope of this paper, however, which has aimed only to formulate the general principles of hospital construction as applied to conditions in New York city.

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It is sometimes complained that isolation hospitals have not fulfilled the purpose intended by their early advocates —that by their means infectious diseases would be "stamped out." It is not clear, however, that such a claim was ever made by any responsible sanitarian, and the statement does not appear to occur in any report made by such person. But it may be remarked that the infectious diseases for which hospital accommodation was at first most often provided—viz., cholera, smallpox, and typhus—have now become extinct, at least as endemic diseases, although no doubt other factors besides hospital isolation have had much to do with their decline.—Franklin Parsons.

In the hospital tents of the Crimea, although the sick were almost without shelter, without blankets, without proper food or medicines, the mortality was not above one-half what it was at Scutari, but these tents had only a few patients in each. Nor was it even as high as this in the small Balaclava General Hospital, which had part of its sick placed in detached wooden huts, while in the well-ventilated detached huts of the Castle Hospital, on the heights above Balaclava, exposed to the sea breeze, at a subsequent period, the mortality among the wounded did not reach 3 percent.—Florence Nightingale.

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Wherever cubic space is deficient, ventilation is bad. Cubic space and ventilation will therefore go hand in hand. The law holds good with regard to hospitals, barracks, and all inhabited places. In airy positions in the country less cubic space is essential than in closely-built towns. In detached huts or pavilions, especially if they be but one story high, less space is necessary than where numbers are massed together in large buildings or in more stories than one.—Florence Nightingale.

# TREATMENT OF SYPHILIS IN A GENERAL HOSPITAL

## Organization Depends on Team Work in the Several Departments, and on Definite and Explicit Written Rules of Routine Conduct—Some of the Details of Operation

By JOHN H. STOKES, A. B., M. D., Chicago, Instructor in Dermatology in the University of Illinois, Formerly Instructor in Dermatology and Syphilology in the University of Michigan

THE organization of a service devoted exclusively to the management of dermatological conditions, with special emphasis on syphilis, is a sufficiently unusual undertaking in this country to deserve the attention of those interested in hospital administration—the more so because in this direction a comparatively virgin field of considerable promise is on the eve of development. In the hospital of the University of Michigan, a general hospital of about 400 beds for teaching purposes, a service of this type has been developed by the reorganized department of dermatology and syphilology under the direction of Professor Udo J. Wile. Until recently this hospital offered the only in-patient service in the state of Michigan which provided special facilities for the care of syphilis at all stages of the disease, and to which frank, uncomplicated syphilis is admitted without restrictions. The writer's experiences in association with this service during the period of its organization, as the first resident and later as instructor in the department, prompts this discussion of the possibilities and management of such a unit and its relation to the administrative problems and functions of the general hospital. The usefulness of such a service in the study and control of syphilis as a social problem has been discussed elsewhere by the writer.[1]

Prior to the reorganization of the department of dermatology at the university the university hospital cared for syphilis in the incidental way characteristic of the large majority of general hospitals in this country. Syphilis as a complication of other conditions, when recognized, was treated by the methods in vogue on the particular service in which it happened to be discovered, provided that service chose to treat the syphilis at all. With the reorganization in question, and through the courtesy of the clinical staff of the hospital as a whole, the centralization of the treatment of syphilis in the hands of one department has, with the exception of pure neurological cases, been accomplished, and the serological diagnosis of the disease carried out through the cooperation of the department of dermatology with the laboratory of the State Psychopathic Hospital. The clinical recognition of the disease has been remarkably facilitated in all departments of the hospital by the availability of expert consultation on refer to the department of dermatology and syphilology. A special clinical and bed equipment, with several isolation wards, has been provided and several times outgrown in the rapid development of this clinic, and its usefulness as a teaching and treatment unit has been so convincingly demonstrated that the success of the undertaking can now be offered as an example worthy of general application to this field. It should not be forgotten that this movement is part of the general tendency, to which medical schools are responding, to recognize the complexity of the problem of syphilis and to provide a staff of specially equipped men in association with the specialty of dermatology to bring the resources of expert knowledge to bear on it.

The writer's hospital and dispensary experience have impressed him with certain advantages which accrue to the general hospital from the development of a special service for syphilis. Not the least of these is the attraction offered by special provision for this disease to competently trained specialists who can give the hospital the benefit of expert knowledge both on diagnosis and treatment. In the teaching hospital, where its advantage for students is obvious, as well as in the nonteaching, patients should have the benefit of such provision. The frequency of latent or even unrecognized active syphilis as a complication of surgical, gynecological, obstetrical, eye and ear, and other conditions is scarcely appreciated without the means for a thorough survey. The experience of the university hospital in this regard is convincing, and has been especially impressive in the recognition and efficient treatment of syphilis in surgical patients and among the children on the eye and ear wards, in whom hereditary syphilis is an often unrecognized condition. Many of these cases—notably, in our experience, herniotomies, tonsillectomies, and pelvic operations—pass undetected until an unfavorable result arouses suspicion, or a lowering of resistance leads to a flare-up of the disease. The risk of infection run by surgeons in operating such cases is very real—in fact, so considerable, and the means of forestalling accidents so simple, that a hospital staff owes it to itself to have the benefit of them. The university hospital now has in force a

[1]Social Hygiene, April, 1916.

ruling which provides for the performance of a routine Wassermann reaction on every patient on his entrance into the hospital for whatever cause. A few months' experience has shown this to be a notable advance, and of inestimable benefit to all concerned. The special clinic for syphilis is prepared to meet a finding of active or latent syphilis in an entering patient by providing an intensive course of treatment which fits urgent cases on the spot for operation in a comparatively short time. The continuance of treatment during convalescence sends the patient from the hospital, not only aware of his condition, but well started on his way toward cure or arrest of his infection.

The success which attends the treatment of syphilis by the expert application of intensive methods, such as the special service for the disease can provide, is an additional reason for centralizing its management in one department. No hospital performs its duty to its patients which discharges them with a syphilitic infection ignored or treated in a desultory or haphazard manner during a brief period of hospital residence. The fact that an incidentally discovered infection is latent at the time the case is seen is obviously no reason for supposing that it will continue such. The adequate treatment of such cases calls for in-patient beds and special knowledge and observation. The ease with which the disease responds to symptomatic measures has probably beguiled the average clinician into the feeling that any physician, whether occulist, aurist, pediatrician, or surgeon, can manage the disease. One of the best testimonies the writer's experience can offer to the contrary is his own observation of the alacrity with which the other clinical services of the university hospital now cooperate in transferring syphilis to the care of the special department as soon as its existence is discovered, and the cordiality of their response to recommendations from that department.

In the matter of active syphilis, every hospital owes a duty to the community quite as pressing as its obligation to the patient. The time will inevitably come when the compulsory isolation and detention of certain types of syphilitics with contagious lesions will be a part of public health regulation of this disease as it is of the acute exanthemata. For such isolation during a short period of active treatment, in-patient facilities must be had. The desirability of such control in itself justifies making it attractive and easy to obtain. It is neither necessary nor desirable that such measures call for special venereal hospitals, to which the stigma of the disease can attach with full force, to the corresponding reduction of their efficiency. The service at Ann Arbor shows convincingly that it is no disadvantage to the general hospital to have special provision for syphilis within its walls. The contagious features of the disease are such that entire control is easily possible in the body of the hospital. The social and moral aspects of the work are aided by the cloak which the dermatological service and the hospital at large can throw over the condition of the patient, who should be shielded from the mistaken narrowness of popular conceptions of so-called venereal disease. A popular treatment center for syphilis on the "sanatorium" plan might require an almost inconceivable revision of social outlook on the disease. It is, however, entirely practicable for the social control and special hygiene of syphilis to be taught, and the disease treated from a special in-patient service center under cover of a general hospital. The writer has urged this point of view in another connection. The urgency of such a need is apparent to everyone who deals with syphilis from day to day. The ignorance of even well-educated, well-intentioned syphilitics, and the appalling indifference of the negligent to the nature of their disease and the obligations imposed on them in their own and others' interest, alternately depress and exasperate their medical advisers. They deserve an enlightenment which the busy dispensary physician or even the private physician too often is obliged to overlook. Two weeks' residence in a special service of the right kind can be made to teach syphilitics what syphilis is, inculcate a sense of responsibility, and develop an intense desire for cure that has some prospect of surviving the dangerous deceptiveness of the disease. More than one patient of the helpable kind left the Ann Arbor service during the writer's residence with some comment such as this: "Believe me, since I've been in this place and seen what syphilis is, I'm going to do just what you say. It's me to get well, believe me!" This state of mind is no bad starting point, and no mean contribution on the part of the service which engendered it, to the hygienic control of the disease.

The personnel of the service at the university hospital is an important element in its efficiency. The majority of the services in this hospital are nonrotating services, on which men enter for two, three, or four years to prepare themselves for specialties. Several of them, including that in dermatology and syphilis, consider only applicants who have had a year of general hospital service. The junior of this staff, as resident, has entire charge of the ward care of patients; the senior, as a paid, full-time instructor in the university, under the direction of the professor, examines all patients seen by the clinic, conducts the

treatment of out-patients, administers salvarsan, which is only given to in-patients, and carries out such operative procedures as the ordinary practice of dermatology demands. Patients on this service, therefore, get the benefit of the care of men primarily interested in the condition for which they need relief, and equipped with an amount of experience in it which the ordinary rotating service intern does not possess, and for which the average attending physician often cannot spare the needed time or detailed attention. That there is nothing haphazard or incidental about the way in which syphilis is managed on such a service is attested by the record of the clinic, whose thoroughness of method approaches that of the Continental type, and in which, for example, infiltrates in giving salvarsan are practically unknown; the drug is given to patients presenting almost insurmountable technical obstacles, and not a single fatality has developed in more than three thousand injections in a schedule which, to the average physician, would appear to be one of heroic therapeutic procedure.

The efficiency of such a service is greatly promoted by a division of labor into clinic and ward responsibilities. Clinic and routine treatment and examination in dermatology can be made to proceed under the discipline and team work of a surgical clinic without sacrificing the interests of the individual case, which are less pressing here than on the wards. Women nurses are capable of meeting admirably the demand for a combination of high speed with accuracy and efficiency here as in any other clinical service. On the wards the question as to whether women should have charge of male syphilitics, occasionally heard at training school headquarters, can in the writer's experience be emphatically answered in the affirmative. Orderlies are necessary only for toilet and bath service. The presence of clean, efficient women as nurses on the male isolation wards of the Ann Arbor service was an invaluable influence in favor of neatness, decency, and the suppression of ribaldry. The control exercised by a permanent resident in full authority over the discipline of such wards is sufficient to compel respect for nurses, and on the Ann Arbor service such control was exercised without serious difficulty even in the writer's "red light district," in which were housed the most vicious, degraded, and even criminal types. Neither the patients nor the nurses lost anything by the contact, and the former gained by the practice of two weeks of courtesy and gentlemanly behavior.

With a total of 45 beds at its disposal, the isolation of primary and secondary syphilis on the Ann Arbor service in a manner appropriate to this type of infectious disease, was accomplished at least until after the administration of a second salvarsan injection, through three small wards of 3 to 5 beds each. Heredosyphilis and latent cases were placed on the general medical and pediatric wards. For the isolation wards special toilet facilities were provided in order to forestall the possibility of an almost unknown form of accidental infection. Gonorrhea as a complication was treated on refer by the genitourinary and gynecological services. All patients known or suspected to be in the active stage of syphilis were placed on a "precautions" routine described below, the measures adopted being comparable to those appropriate for such conditions as tuberculosis with bacilli in the sputum, an ample provision, considering the much lower vitality of the spirocheta pallida.

The perfection of its cooperative relations with other clinics must engage a large part of the attention of a service for syphilis in a general hospital, and is a crucial test of its effectiveness. The development of such relations must be a give-and-take affair at the outset, whose cordiality will increase with the growth of appreciation of the seriousness of syphilis as a complication of other conditions, and the favorable and speedy effect of efficient treatment. The policy of such a department in general may properly be, as at Ann Arbor, that of expecting the transfer to their wards of all cases in which the responsibility for intensive salvarsan or mercurial therapy is to be assumed. On the other hand, cases should be transferred back to their departments as soon as the more imperative indications are met, and their antisyphilitic treatment continued with the cooperation of the dermatological service. In this way, in addition to patients in its own beds, the service is assuming a measure of responsibility for cases undergoing other forms of treatment in other parts of the hospital. As an example of the working of such a cooperative system, interstitial keratitis at Ann Arbor is treated on the wards of the department of dermatology and syphilology, through the courtesy of the department of ophthalmology, with marked success, the department of ophthalmology cooperating on local measures. Hernia cases with latent syphilis, if there are no immediate contraindications to operation, and the patient will not undergo preparatory treatment, are operated and transferred within forty-eight hours to the wards of the dermatological service, where a vigorous salvarsan-mercury therapy is carried on during the operative recovery. On the other hand, children temporarily quarantined in the contagious hospital are often continued in treatment during such isolation, and operative

cases whose condition necessitates constant surgical attention are treated on their own wards.

The standardization of its practice, in a service attempting to maintain the highest level of cooperative efficiency, easily becomes a serious problem in a large hospital. With this problem the writer was promptly confronted in the necessity for controlling the care of a wide variety of cases, contagious and noncontagious, over almost the entire hospital. The extraordinary range of dermatological conditions and the widely varying indications for their management nonplussed the nursing staff, accustomed to more uniform types of procedure. Entering cases of acute generalized eczema were plunged into soapy baths, with disastrous results, whereupon frightened nurses could scarcely be persuaded to allow cases of psoriasis to enter the bath room. The writer thereupon undertook to do away with uncertainties and stop the efficiency leak by standardizing the practice of the department through the preparation of a written manual of ordinary ward procedure, precautions, and standing orders. This device of collecting and systematizing, within one set of covers, the mass of information a nurse usually has to seek from hearsay, mouth-to-mouth tradition, conflicting instructions and typewritten sheets pasted in inconvenient corners, was successful in accomplishing for the service some of the benefits derived from the efficiency system of management as applied in manufacturing plants. The "routine" was made part of the desk equipment of all wards regularly receiving dermatological patients, and copies were filed for borrowing in the office of the superintendent of nurses. The development of this standard source of information was particularly valuable in counteracting the effect of the constant changing of nurses unavoidable in a training school hospital. Nurses about to assume responsible posts on the wards of the service were required to prepare themselves by a study of it. The head nurses who worked under it frequently commented on the satisfaction of substituting definite written instruction for the uncertainties of tradition, and on the way in which responsibility could be localized. The practice of the department maintained a highly satisfactory degree of uniformity, dependability, and smoothness of operation even to small details. The writer can vouch personally for the amount of drudgery which the system saved him, once it was under way, by doing away with repetition, explanation, interruption, and misunderstanding. The stoppage of thought waste and energy expenditure, and the often unbroken hours of leisure concentrated on the individualization of patients and the demands of original work, which were earned for the resident by the simple phrase, "see the routine," many times repaid the labor of its preparation.

In addition to securing a standard reliability of practice, the routine aimed to enlist the active cooperation of nurses through an intelligent comprehension of the rationale of our procedures as distinguished from mechanical and unintelligent obedience. The attention of nurses was called to the refinements of nursing care, as they specifically affect dermatological patients. The matter of standard and complete ward records was given special attention, since it is on the wards that much of the value of a case for future investigation and study in the records of the department can be conserved or lost. In matters pertaining to the nursing care of syphilis the routine went into detail, with especial emphasis on "precautions," the departmental system for the management of infectious cases. The contagious lesions of the disease and their common localizations were described in ordinary terms, and the importance and technic of calomel prophylaxis for the slightest injury or abrasion, together with a report to the resident of all such occurrences, were insisted on. Special colored cards were placed in the medicine rooms of the wards, warning nurses of the necessity for observing this rule. The marking and sterilization of dishes used by active cases, the handling of dressings, clothing, instruments, and the patient himself, the use and care of rubber gloves and the danger from slight defects and pinholes, the total immersion of thermometers, and other details for the protection of both patient and nurse, were described. These explanations did away with the ignorance that makes accidents possible on the one hand, and, on the other, set at rest the indefinite fear of the disease which many had.

The after-care of salvarsan patients formed an important part of the routine, and, by its exact limitation of nursing discretion and definition of important types of reaction to the drug, repeatedly nipped potentially serious situations in the bud. After each injection the patient entered automatically on a period of twenty-four hours of special observation, diet, etc., comparable to that of an operative clinic, and supervised by a nurse with an active knowledge of what to be on the lookout for. The mercurial inunction was introduced into the service routine for the purpose of teaching patients during their residence a simple and reliable form of treatment. The technical instruction for this important procedure was given by nurses in accordance with a description in the routine. Each patient, before discharge, received at least three inunctions given in the correct man-

ner by a nurse whose duty it was to see that the patient understood the technic. Every patient in this way left the clinic equipped to cooperate effectively with his physician.

The usefulness of the ward routine led the writer to prepare a similar manual for the outpatient and clinic service. Many dermatological procedures can be as highly specialized as those of an eye, ear, or surgical clinic, and be quite as confusing to nurses called on to assist at them unprepared. Salvarsan, when given with all the exactions of rigid aseptic technic, as in this clinic, to a large number of patients is a formidable procedure, and, as the service grew, only a high degree of nursing skill could meet the demands of speed and proper technic. To hasten the development of the correct reactions, the clinic routine was so constructed as to define each of the common procedures in terms of team work, and even of individual movements on the part of the participants, and by properly arranged lists and diagrams to reduce lost motion to a minimum. The rapidity with which new human cogs could be fitted into this machine without seriously disturbing the work of the principals soon justified it, and the training school office evidenced its appreciation by its selection of nurses to meet our requirements. By these means, with staff and nurses numerically unequal to the demands made on them, and in a space absurdly small (a room about 15 feet square), with the aid of two screens, it was possible to work constantly with a potentially dangerous disease, see refers, both syphilitic and nonsyphilitic, minutely examine and take complete and, when necessary, private histories on all patients, draw the Wassermann bloods for the hospital, administer both old and neosalvarsan at the rate of from ten to twenty-five injections on two afternoons a week, hold teaching sections five hours a week, carry out diagnostic procedures, such as lumbar punctures and biopsies, and perform minor operations, all with military precision and without overtime work or the constant repetition, correction, and vexation which exhaust the nerve and efficiency of a clinic staff.

The usefulness of these two manuals convinced the writer of the applicability and value of efficiency methods and ideals to a hospital service, and in particular to one in which a disease such as syphilis is the center of attention.

The writer has also considered elsewhere the social and psychological problems for whose solution means should be provided. The situations induced by the social stigma of syphilis demand a special mechanism for the protection of professional confidence and incognito, for individualization and reeducation, requiring not only insight on the part of the staff, but also adequate provision in such practical details as private rooms, small segregation wards, nursing discretion, and the like. The problem of an adequate follow-up on its syphilitic patients, whose treatment cannot, in the nature of the disease, be completed in a hospital residence, is considered in the same connection. The system in vogue at the university hospital shares the weaknesses of all purely voluntary control of this phase of the disease. It is at least moderately successful in inducing patients to remain under medical control and in touch with the clinic by keeping up communication with the home or referring physician and by the performance of free blood tests. There is, however, still much to be desired.

To stimulate and provide for original investigation in the furtherance of knowledge of the disease is one of the most vital obligations of a clinic for syphilis, and one whose fulfillment can be furthered only by its association with a large general and especially a teaching hospital. The clinic in dermatology and syphilology which attempts to conduct research on dispensary equipment is hampered most seriously at the outset. Fruitful investigation demands control of patients and time and facilities for study, as well as men, and these practical essentials are best obtained through the medium of in-patient beds, an adequate laboratory, and a system so highly organized as to be able to care efficiently for its patients without consuming the priceless leisure of its staff by endless petty routine and detail. Toward the achievement of these ideals the Ann Arbor clinic has made an encouraging beginning. No small part of the value of its publications has depended on the association of the clinic in syphilis with the other services of the hospital, whose expert aid has been an essential part in the completeness of investigations published by its staff. In reciprocal manner, expert knowledge of syphilis, easily available, is no mean contribution to the ability of other departments to further the advance of knowledge.

The segregation and centralized management of syphilis within a general hospital is, then, no longer to be regarded as an unprecedented experiment. As this paper is in preparation for publication, two large Detroit hospitals, the Harper and the Herman Kiefer, announce their readiness to receive syphilis as such and provide adequate treatment for it. It is to be hoped that others will adopt a similar policy toward the disease. Municipal and county hospitals especially cannot afford to ignore the obvious claims which syphilis has to special attention among the poorer classes. The relation of in-patient and dispensary treat-

ment to each other in the management of syphilis is, as in the case of tuberculosis, complementary and not antagonistic. The provision by the latter for diagnosis and ambulatory care by no means meets the whole situation. Temporary quarantine and intensive treatment for actively contagious cases, the management of syphilis as a complication of other hospital conditions, and many of the social problems of the disease, are the legitimate field of the in-patient service. No hospital providing for the instruction of students and alive to its obligations and opportunities in the field of investigation can regard itself as completely equipped without a staff and service devoted to syphilis.

The special venereal hospital, hampered as it will be for a long time, if not always, by the prejudice which its name and function create, will serve the campaign against syphilis much less efficiently than the inconspicuous hospital unit which experience is rapidly demonstrating to be a practical, valuable aid in the work of the hospital as a whole and in the general struggle against syphilis as a disease.

## CHAPIN MEMORIAL PAVILION, SPRINGFIELD (MASS.) HOSPITAL

### Private Patient Building Contains Latest Devices for Beauty of Form, Economy of Administration and Efficiency of Service—Some of the Details of Construction —Wall Colorings and Furnishings in Private Rooms

Fig. 1. Chapin Memorial, Springfield Hospital. Main entrance.

THIS building, recently erected in memory of a leading physician, is a part of the general equipment of the Springfield Hospital. It is the first of a series of new buildings to be erected under a comprehensive plan of development, and is for the accommodation of private patients only; it contains forty-five patients' rooms with ample toilet facilities, operating and x-ray department, pathological laboratory, and all accessories to make a complete hospital in itself.

The building is of red brick and limestone, with steel frame, reinforced concrete, floor slabs, gypsum block partitions, and inlaid slate roof. The diet kitchens, utility rooms and toilets have tile floors and vitrolite wainscot. The operating rooms have Tennessee marble floors and white Italian

marble wainscot. Elsewhere the floors are of battleship linoleum cemented to the concrete with coved cement base. All corners and angles are rounded. The door frames are of steel and the doors are without paneling. Casement windows are provided, and these and their transoms are operated by levers from within, leaving the openings fully screened at all times. The stairways are of iron with slate treads.

Fig. 2. Chapin Memorial Pavilion, Springfield Hospital. Rear and side views.

The equipment of the building is complete, including an electric automatic control elevator, glass-lined Pfaudler chutes, one for soiled linen and one for the operating room waste; the "Eye-comfort" indirect lighting, the Holtzer-Cabot nurse signal system, intercommunicating and general telephones, blanket-warming chambers, and medicine closets fitted with glass shelves and special sinks.

Low pressure steam is used for heating, and high pressure for sterilizers, blanket warmers, water heating, etc.

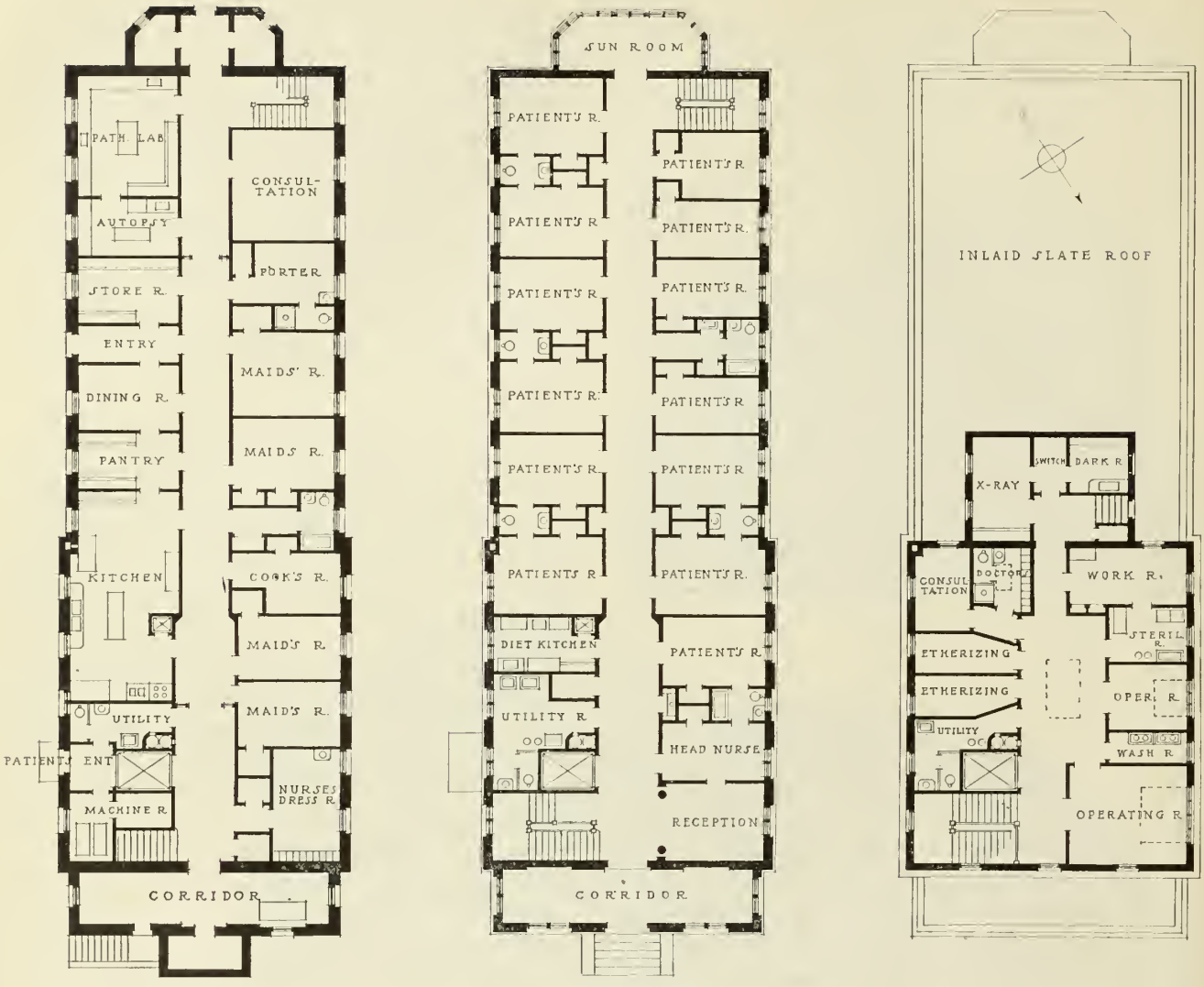
The rooms are simply and tastefully furnished. The walls are painted a light tan color. Certain of the rooms have brass bedsteads and mahogany bureaus and chairs; others have white enameled bedsteads and white bureaus and chairs. Bureau and table tops are covered with glass over chintz. The beds are adjustable to various angles for the ease of patients.

The first floor arrangement is practically duplicated on the second and third floors, the rooms being somewhat varied in size and rental value to meet various requirements.

Fig. 3. Chapin Memorial. Operating room.

Fig. 4. Chapin Memorial. Reception room.

The two interior views of this institution will give an idea of the character of the inside arrangements.




Basement. First floor plan. Fourth floor plan.

Fig. 5. Chapin Memorial Pavilion, Springfield Hospital.

## A FEW PROBLEMS OF SMALL HOSPITAL MANAGEMENT

### The Medical Staff the Most Important Factor in the Institution—Arrangement of Intern Work—Cooperation Between Head Nurses and Interns—Case Histories and Records —Trained Technists for Departments—Difficulties of Small Hospitals

By MRS. B. GOLIGHTLY, Superintendent Birmingham Infirmary, Birmingham, Ala.

NO hospital can succeed unless it is striving for greater efficiency, and is getting the unalloyed support of the visiting staff. In order to merit the support and cooperation of the staff it is imperative that the superintendent of the hospital be ever on the alert to keep the organization and management of the hospital up to the highest degree of efficiency. Such an undertaking is no little task, as most every one connected with hospital management well knows. This is especially true in the smaller hospitals, and in those which are unendowed, and have to depend on fees alone for their support. Large hospitals which are the recipients of large donations and generous endowments are spared many of the worries and difficulties to which the smaller institutions are frequently subjected.

The hospital is no longer merely a place to send people who are sick and injured after a diagnosis has been made, but is supposed to be a scientific institution provided with modern equipment and laboratory facilities requisite to the advanced methods of diagnosis and treatment, and to maintain an organization capable of utilizing such equipment to the best advantage, and to the best interests of the patients. This, as I have intimated already, is much more easily done in institutions in which the volume of work is large, and

available funds are to be had aside from those collected as fees from patients.

Where the volume of work is sufficient to justify it salaried experts may be placed in charge of the more important laboratories. In the smaller hospitals, those, for instance, with a capacity of 75 to 100 patients, such a course as mentioned above cannot be pursued, as the end will not justify the means. It is essential, and I might say imperative, that in institutions of this size the facilities for diagnosis and treatment must compare favorably with those used in the larger places if we would have them merit success, and retain the confidence and support of the medical profession.

The problem for solution then, is: What can we do to bridge the difficulties of the smaller hospitals? The first question to dispose of is "case histories." In the smaller institutions where there are only one or two interns to do all the work the matter of case histories has been notoriously neglected. The explanation of this is not difficult when we take into consideration the variety and multiplicity of duties that devolve upon the intern of a small hospital. In the larger institutions this work is usually assigned to one of the junior interns, who is responsible for its being done, and who, usually, has time to see that it is done well. This difficulty can in a great measure be overcome through the cooperation of the head nurses and the interns. Make it the duty of the head nurse of each department to get a history of every case immediately after receiving the patient. A special form of blank should be used for this purpose, which is so arranged that it can be supplemented and approved by the intern at a convenient time. Another, and more difficult, matter to handle is that of reliable laboratory aid. The intern as a rule is not an expert pathologist, and, if so, has not sufficient time in connection with his other duties to render expert assistance. I can conceive of no better way to remedy this obstacle than for the board of directors to adopt a broader and more liberal policy by appointing a pathologist to do this work on some equitable basis. To make the work sufficiently interesting and remunerative for the pathologist it would be necessary to have the support and cooperation of the visiting staff. The x-ray laboratory, which is now a necessary auxiliary to every hospital, can be managed in the same way.

The question of capable nursing is one of extreme importance, and often of grave concern. Many institutions have suffered serious and even permanent embarrassment through the mistakes of ignorant, careless, and unskilled nurses. Nurses, like people in other walks of life, are not infallible and will continue to make mistakes; however, these should be of a minor nature, and of infrequent occurrence. A nurse that is continually making mistakes is not suited to the work, and the sooner she abandons the calling the better it will be for herself and humanity. Probably, in no other department of institutional work is the superintendent of nurses more sorely taxed than in her selection and management of pupil nurses. She should be as an executive very astute in her judgment of people, and tactful in methods of discipline. Nothing speaks better for a superintendent than the personnel of her nurses, and the efficiency of their work.

The relation of the physician to the hospital is a very close and complex one, and a lack of consideration and respect for the physician's rights and privileges has often brought discredit to the superintendent and disrepute to the hospital. Every physician connected with a hospital should receive every possible courtesy and consideration from the hospital management. The management should cooperate with the physician in an effort to give each individual patient the highest type of service. It is not infrequent that a physician complains that he is not getting the support of the hospital in the management of his cases. This is a grievance that should never arise. No superintendent, intern, visiting physician or nurse should ever do or say anything that would tend to disparage the attending physician, irrespective of the volume or quality of his work, or of his financial interest in the institution. I cannot speak in terms too strong against coalitions that exist in some hospitals in an attempt to promote the interest of some certain man, or set of men. Such a policy can never build up a strong and worthy institution.

It should be the purpose of the entire hospital management and visiting staff to work in unison to one chief end, that of rendering the highest type of scientific service to each individual patient.

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Except in a few cases well known to physicians, the danger of admitting fresh air directly is very much exaggerated. Patients in bed are not peculiarly inclined to catch cold, and in England, where fuel is cheap, somebody is indeed to blame if the ward cannot be kept warm enough, and if the patients cannot have bed clothing enough, for as much air to be admitted from without as suffices to keep the ward fresh. No artificial ventilation will do this. —Florence Nightingale.

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The want of fresh air may be detected in the appearance of patients sooner than any other want. No care or luxury will compensate for its absence. Unless the air within the ward can be kept as fresh as it is without, the patients had better be away.—Florence Nightingale.

## TENT COLONY OF THE MASSACHUSETTS GENERAL HOSPITAL

### Out-Door Ward Proves Economical and Beneficial—Method Found Satisfactory for Care of Patients During Renovation of Wards

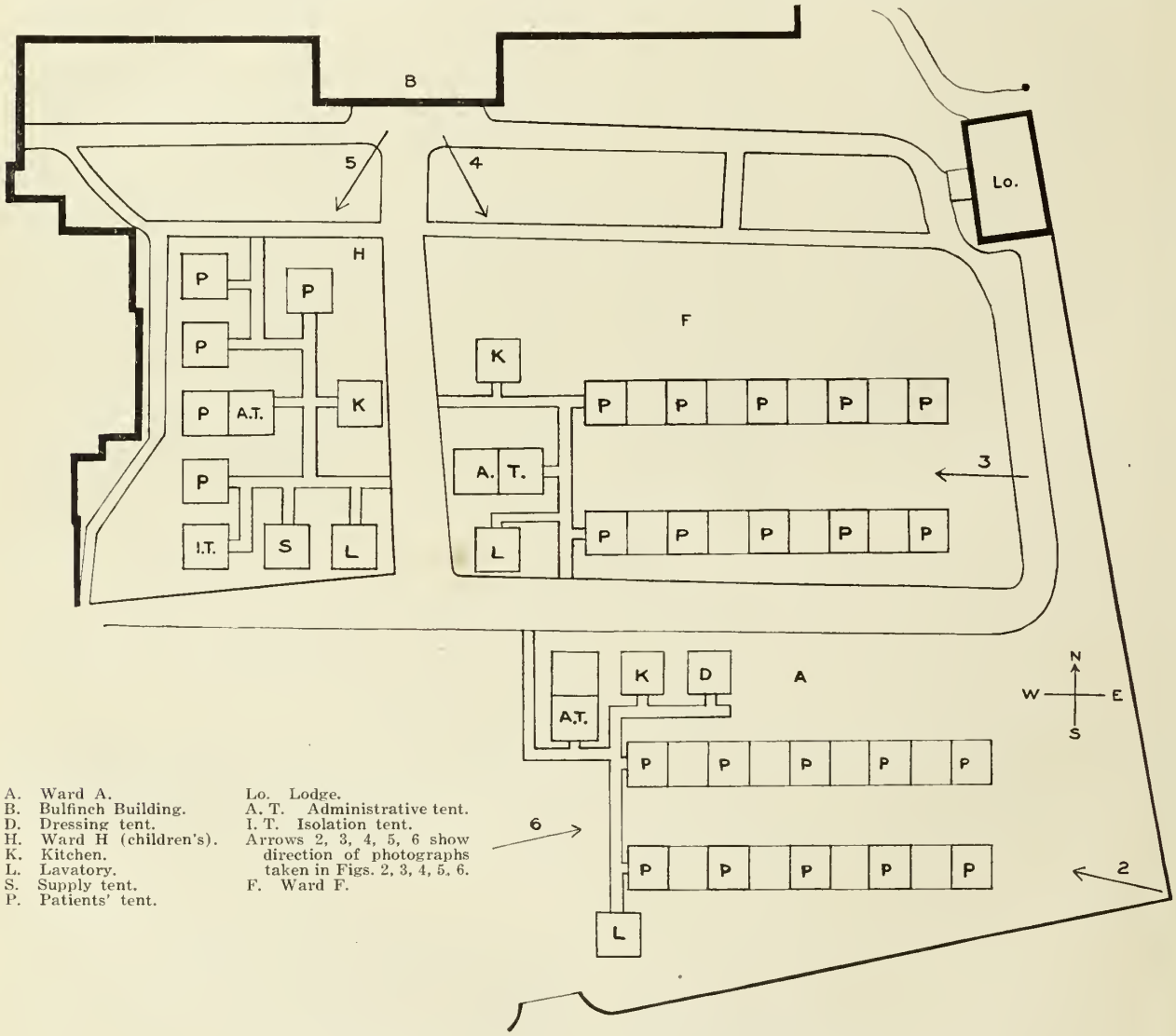
By HAROLD W. HERSEY, M. D., Assistant Resident Physician.

FOR several years it has been the custom at the Massachusetts General Hospital to move a certain number of patients into a tent ward as early in the spring as weather conditions would permit, and to maintain this ward until the cold fall nights have made a further stay impracticable.

The first tent colony was established in the hospital yard during the Spanish-American War in 1898 to facilitate the care of the large number of typhoid cases among the soldiers. When in 1907 it became necessary to completely renovate one of the wards, a similar colony was established, to which the patients of that ward were moved during the alterations. There were accommodations for 18 patients. The ward remained open from June 13 to November 1, and during the season 90 medical patients were cared for. The experiment proved a decided success, and since that time has become an established custom.

The first object of the colony has been the removal of all the patients from a ward, thus leaving it free for necessary cleaning or painting, the laying of linoleum, or other renovating. By this method the work may be accomplished more rapidly and completely, and without confusion or discomfort to the patients. When the ward is again ready for occupancy, the patients from a neighboring ward are moved into it, rather than moving back the original patients, thus avoiding unnecessary transfer.

The second object is to give as many people as




A. Ward A.
B. Bulfinch Building.
D. Dressing tent.
H. Ward H (children's).
K. Kitchen.
L. Lavatory.
S. Supply tent.
P. Patients' tent.
Lo. Lodge.
A. T. Administrative tent.
I. T. Isolation tent.
Arrows 2, 3, 4, 5, 6 show direction of photographs taken in Figs. 2, 3, 4, 5, 6.
F. Ward F.

Fig. 1. Tent colony of the Massachusetts General Hospital. Ground plan.

possible the benefits of out-of-door life. This applies not only to the adult patients, many of whom are placed in these ideal hygienic conditions for the first time, but also to the children, who are much happier in the tents and decidedly benefited

Fig. 2. Ward A (as it appeared in 1913 and 1914). Arrow 2 in Fig. 1 shows the direction in which this view was taken. The lawn seen behind the trees at the right of the path was occupied in 1915 by wards F and H.

by out-of-door treatment. The health of the nurses is improved. They enjoy their work in the open, and seem less tired at the close of the day than when on regular ward duty.

Since 1907 the type of case admitted to the wards has changed, and for the last few years only male surgical and genitourinary patients have occupied the adult ward, an additional ward being occupied by the children.

This year we were confronted by an unusual

Fig. 3. Ward F. (See arrow 3, Fig. 1.) This shows the two rows of five tents, each joined by a connection fly. The tent walls are rolled up, allowing a free circulation of air. In the center of the picture is the administrative tent, while in the background are seen the tents of ward H. The Bulfinch Building appears at the extreme right of the picture, over the tent tops.

building problem. A new eight-story building to accommodate 100 patients was contemplated; two wards, with a total capacity of 28 beds, were to be torn down; a third building, with a capacity of 16 adult beds and 2 cribs, was to be moved a considerable distance, elevated, and a corresponding unit built beneath it; the construction of a new administrative building had begun. It was necessary; therefore, to plan for the accommodation of some 40 patients under canvas in addition to the children's ward, and to arrange these tents in such a manner as to in no way interfere with the building procedures.

The lawns in front of the Bulfinch building were found to be ample for this purpose. The first tents were ready for occupancy on May 11. Forty patients were transferred—20 to ward A, the male surgical and genitourinary ward, and 20 to ward H, the children's ward. On May 20 ward F, a new unit, was completed and occupied by 20 male surgical cases. This gave a total of 60 patients in the tent colony. An extra crib was placed in the isolation tent for use if a contagious case were suspected.

The accompanying diagram (Fig. 1) shows the

Fig. 4. Ward F. Taken from the front of the Bulfinch Building (arrow 4, Fig. 1). The path and horse chestnut tree at the extreme right of this picture appear at the extreme left of the next picture (Fig. 5).

general plan and arrangement of the tents. The two adult wards A and F were arranged in two parallel rows of five tents each. The three inner tents of each row were joined to their neighbors on either side by an extra tent fly, the ridge pole of which was supported by the tent pole of the neighboring tent. This gave a continuous sheltered walk between each two tents of the group. At one end of the row was placed the office or administrative tent, the kitchen, and the lavatory. Ward A was further provided with a smaller tent 12 by 13 feet, in which the surgical dressings for ambulatory cases were done. Within was a framework of somewhat smaller dimensions, which was covered with regular wire window screen to exclude flies and insects.

The children's ward (H) was laid out with two tents on either side of the administrative tent. Opposite and facing the office was the kitchen, while on the south were the supply and lavatory

tents. A single tent north of and at right angles to the office completed this ward. In all thirty-six tents were erected as follows: Ward A, 14; ward F, 13; ward H, 9.

The construction of the colony is according to the following plan: each tent is provided with a firm floor of 7/8-inch spruce on 3 x 4-inch joist, which is continuous with a 4-foot board walk, communicating with all the tents of the group. The regulation United States army hospital tent

Fig. 5. Ward H. Children's ward. From the same point as Fig. 4. (See arrow 5, Fig. 1.) Four cribs are placed in each tent.

of heavy khaki duck is used. Those purchased this year for ward F are 14 feet 6 inches x 14 feet 6 inches. The wall is 4 feet 6 inches, and may be rolled up and held in place by ties. The height is 11 feet and the door is 9 feet high. Each has a fly with a 1-foot overhang, and the ridge pole projects a corresponding 1 foot at either end. The older tents are somewhat larger in proportion, and have a screened vent at the top, opening into a prismatic chamber for further ventilation.

Each adult tent accommodates 2 patients, and contains 2 beds, two chairs, and two small tables. Each is wired for electricity and provided with a portable electric light. The beds are the regulation white enamel iron hospital bed, with firm steel band supports for the mattress rather than wire springs. They are provided with two mattresses, and plenty of blankets are available.

The kitchens contain a soapstone sink, with running hot and cold water, a steam-table, gas stove, cupboard, fruit closet, water cooler, refrigerator, and two serving tables.

The lavatory is provided with hopper, sink, toilet, and bath tub, all with sewer connections. A partition through the center forms two compartments for toilet purposes. Racks for urinals and bed-pans, solutions, solution basins, hot water bags, and medicine glasses complete the equipment.

The administrative tent contains a desk and telephone for the head nurse, a fire extinguisher, chests for linen, tables for sorting supplies, a bookcase, chairs, a chest for drawers, a medicine cabinet, and tables for sutures, ligatures, needles, and the like. In front of each administrative tent is placed an additional fly, which forms a sheltered piazza for the transaction of ward business during favorable weather.

The equipment of the children's ward is practically the same as that of the adult wards, except that 4 cribs are placed in each tent. The kitchen is also screened from flies and is entered through a screen door.

The season of 1915 has proved very successful. As stated above, the first patients were moved to the ward on May 11, 1915, and the wards were brought to their full capacity on May 20, 1915. On September 25 it was decided to move the children's ward back to the house, as the nights were becoming chilly. The other wards were maintained with perfect comfort until the late fall, and not until November 16 was any further change made; then, in preparation for the final move, ward A was abolished, and, although the temperature dropped on several nights to below 30 degrees, the remaining patients were still kept comfortable and happy. The lowest night tempera-

Fig. 6. Ward A. (See arrow 6, Fig. 1.) A fire extinguisher is placed on the pole at the center of the picture. At the left is the administrative tent and the kitchen.

ture recorded was 25 degrees. On December 5, 1915, the remaining patients were transferred indoors, and the ward was closed after a total occupancy of 207 days.

As compared with the previous three years, the following table of occupancy is of interest:

| Year. | Ward opened. | Ward closed. |
|---|---|---|
| 1912 | May 16 | November 1 |
| 1913 | May 7 | October 6 |
| 1914 | May 20 | October 22 |
| 1915 | May 11 | December 3 |

During the cold weather large cylindrical oil stoves were used freely to warm the tents. Each

patient was provided with heavy blankets, and occasionally the less robust requested warm water bottles at their feet. Heavy wrapping paper was placed under the mattresses to exclude cold air. The patients remained perfectly happy until the end of the season, and not a single request was received from a patient to be transferred indoors.

In wet and rainy weather the nurses were provided with rubber boots, hats, and coats. At night the pocket flash light was found of considerable value. During the latter part of the season one tent was set aside as a recreation room or "club house," as some of the patients called it, where the ambulatory patients gathered on bleak days for cards, dominoes, and smoking. A large coil of steam pipe, occasionally augmented by oil heaters, furnished sufficient warmth.

The following table, made out on June 13, 1915, may be of interest as an indication of the type of cases[1] treated in these wards:

WARD A

| Patient. | Diagnosis or operation. | Number days after operation. | Number days on the ward. |
|---|---|---|---|
| 1 | Post-traumatic ulcer of foot | 6 | 21 |
| 2 | Subacute appendicitis | 6 | 2 |
| 3 | Fractured femur | 44 | 44 |
| 4 | Osteomyelitis of tibia | 18 | 12 |
| 5 | Right inguinal hernia | 8 | 2 |
| 6 | Subluxation of fourth lumbar vertebra | 50 | 50 |
| 7 | Fractured dorsal spine | 0 | 58 |
| 8 | Fractured lumbar spine | 0 | 61 |
| 9 | Traumatic crush of feet | 3 | 37 |
| 10 | Fractured dorsal spine | 0 | 25 |
| 11 | Right renal calculi | 5 | 9 |
| 12 | Pyonephrosis and diabetes | 0 | 3 |
| 13 | Stricture of urethra | 10 | 12 |
| 14 | Obstructing prostate | 0 | 12 |
| 15 | Obstructing prostate, acute retention | 10 | 19 |
| 16 | Obstructing prostate | 0 | 6 |
| 17 | Diverticulum of bladder | 4 | 17 |
| 18 | Tortion of testicle | 3 | 3 |
| 19 | Cystic | 0 | 4 |
| 20 | Specific deformity of nose | 25 | 1 |

WARD F

| Patient. | Diagnosis or operation. | Number days after operation. | Number days on the ward. |
|---|---|---|---|
| 1 | Cholecystostomy | 11 | 2 |
| 2 | Compound fracture of femur, fractured ulna | 17 | 16 |
| 3 | Explorative operation for enteritis | 12 | 10 |
| 4 | Appendicitis | 11 | 1 |
| 5 | Osteomyelitis of femur | 23 | 20 |
| 6 | Fractured tibia | 20 | 21 |
| 7 | Empyema | 24 | 19 |
| 8 | Fractured femur | 99 | 25 |
| 9 | Renal colic | 4 | 2 |
| 10 | Septic ankle joint | 30 | 10 |
| 11 | Tuberculosis ischium | 18 | 16 |
| 12 | Septic elbow | 16 | 15 |
| 13 | Inguinal hernia | 8 | 7 |
| 14 | Osteomyelitis of femur | 6 | 5 |
| 15 | Amputation of leg | 15 | 10 |
| 16 | Removal of bone plate for sinus | 22 | 21 |
| 17 | Stab wound of intestines | 34 | 30 |
| 18 | Fistula in ano | 4 | 3 |
| 19 | Osteomyelitis of femur | 10 | 5 |
| 20 | Cholecystectomy | 11 | 1 |

[1]Many of these cases were transferred from the indoor ward to the tents when the ward opened, which accounts for the large number of days noted in the right-hand column of wards A and F.

On the children's ward the same day were the following cases:

| | | | |
|---|---|---|---|
| Feeding | 4 | Hernia | 1 |
| Pyloric obstruction | 1 | Empyema | 2 |
| Endocarditis | 1 | Osteomyelitis | 1 |
| Pneumonia | 1 | Fractured femur | 1 |
| Acidosis and tuberculous spine | 1 | Tuberculosis of elbow | 1 |
| Tuberculous peritonitis | 1 | Fractured ribs | 1 |
| | | Acute arthritis | 1 |

In closing, I wish to emphasize the following points:

1. A tent ward may be established at a comparatively small initial outlay.

2. It may be maintained at a minimum expense.

3. The advantages are:

1. To the administration: (a) the opportunity to reconstruct and renovate wards without discomfort to the patients; (b) a saving of expense for labor, as the workmen can accomplish their tasks in a rapid and systematic manner, unhampered by patients in the ward.

2. To the patient: (a) the opportunity to live out-of-doors; (b) the more rapid convalescence resulting therefrom.

3. To the nurses: (a) out-door life and better health resulting; (b) less housekeeping and ward work; (c) the completion of the day's work with less fatigue.

4. Even under New England's climatic conditions it is feasible to establish such a ward in early May and to maintain it until late November, thus undertaking renovating requiring six months for completion.

5. The patients enjoy the life, and not only are they willing, but anxious, to continue it.

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The most famous among the later hospitals of the Christian Orient was the Orphans-tropheion at Constantinople, founded by the Emperor Alexius (1081-1118). It was the size of a small town, situated on the eastern limits of the city, and was occupied by nearly 10,000 poor and sick of every age, religion, and origin. It had a sufficient income to more than cover all needs, but the care of the sick was in the hands of the clergy, who treated the patients through information obtained from medical books.—J. Marcuse.

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It may seem a strange principle to enunciate, as the very first requirement in a hospital, that it should do the sick no harm. It is quite necessary, nevertheless, to lay down such a principle, because the actual mortality in hospitals, especially in those of large, crowded cities, is very much higher than any calculation founded on the mortality of the same class of diseases among patients treated out of hospital would lead us to expect.—Florence Nightingale.

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Light is absolutely necessary for our health. The more sunlight penetrates into a building, the better it is. But there is one incidental effect which must be mentioned and which is of far-reaching hygienic importance—light promotes cleanliness.—M. Rubner.

## SMALL HOSPITAL WITH MINIMUM OF ADMINISTRATIVE SPACE

### St. John's, of Anderson, Ind., Has All the Necessities of Modern Service Without Waste of Space—Arranged for Future Growth

By D. A. BOHLEN & SON, Architects, Indianapolis, Ind.

Fig. 1. St. John's Hospital. Planned so that a second wing can be built to complete the design.

ST. JOHN'S HOSPITAL is located on a knoll and completely isolated from all other buildings, so that all sides of the building come in direct contact with fresh air and sunlight, so essential in this type of building.

In planning the building, provision has been made for a future addition of practically the same design as the long wing already built.

The building is entirely of fireproof construction, with steel beams and hollow tile arches, hollow tile partitions and cast iron stairways and elevator enclosures. The floors throughout the corridors are of cork carpet with a border and sanitary base of terrazzo. The floors in the rooms are of white maple with a sanitary cove base of oak. All of the doors throughout the building are of sufficient width to allow a free passage of a roller bed and are of a flush type.

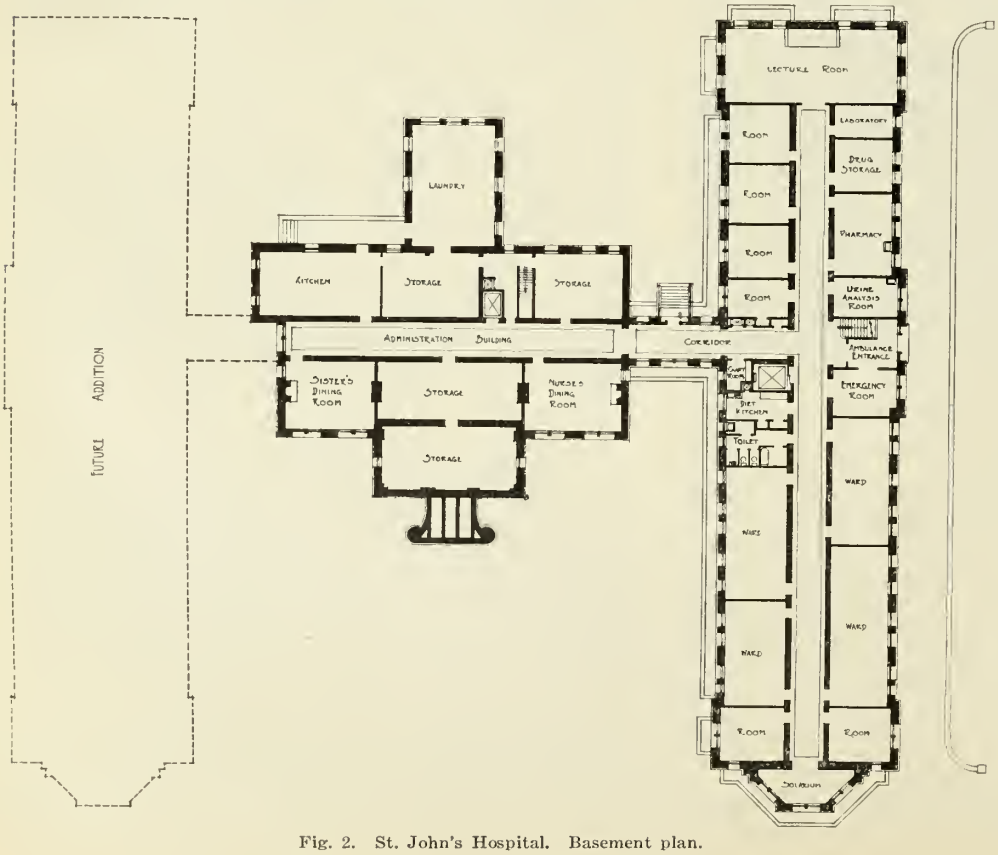


Fig. 2. St. John's Hospital. Basement plan.

The building is three stories above the ground floor. The ground floor is about 60 per cent above grade, so that all the rooms receive ample light and air. The ground floor is devoted practically to the wards and to more or less private rooms for the attendants. In the administration building, this floor is devoted to the dining room, general kitchen, laundry and general storage rooms for the hospital, while the rear of the wing is devoted to lecture rooms for the nurses, pharmacy department and private rooms.

On the north side of the building a drive-

way has been provided for the admission of the patients from

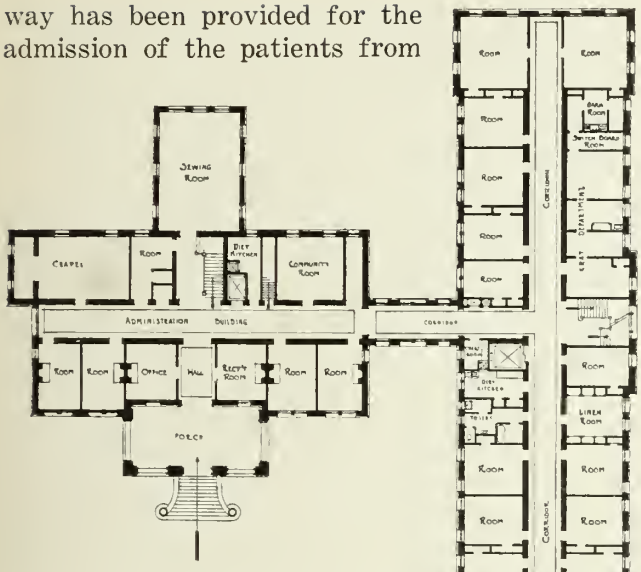


Fig. 3. St. John's Hospital. First floor plan.

ambulances and also for the general use of physicians. This entrance is in close proximity to the elevator and stairway and facilitates the quick handling of emergency cases.

The first floor of the administration building is devoted to the administrative offices and to the chapel, community room and sewing room for the sisters. In the north wing, the first floor is devoted exclusively to private rooms with the exception of the x-ray department. This department has been equipped in the most modern method, employing lead linings for the walls, isolating the switch board room and control room, and

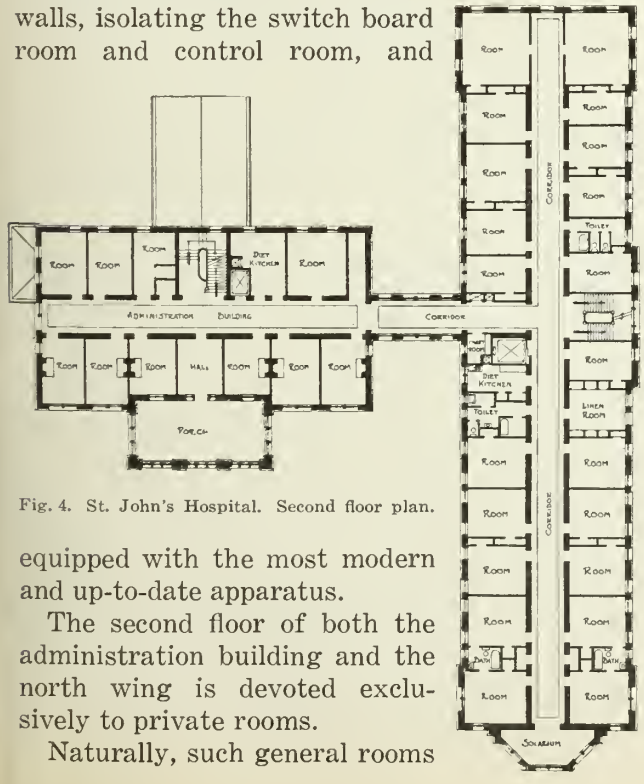


Fig. 4. St. John's Hospital. Second floor plan.

equipped with the most modern and up-to-date apparatus.

The second floor of both the administration building and the north wing is devoted exclusively to private rooms.

Naturally, such general rooms as diet kitchens, chart rooms, linen rooms, closets, toilets, etc., are scattered throughout the building so as to be convenient to all rooms.

The third floor is devoted exclusively to the operating suites and recovery rooms. There are three general operating rooms, one maternity room, and one minor operating room. All of these rooms have high wainscotings and floors of a greyish tone of terrazzo, and all of the equipment is so arranged as to be easily accessible for cleaning, etc. This floor also contains the sterilizing rooms, dressing rooms for doctors and nurses, instrument storage and sterilizers, and etherizing rooms for each operating suite.

The building is equipped throughout with an electric automatic call system and a complete internal telephone system which is connected through the switch board to the city lines, so that it is an easy matter to reach any patient or physician in the building, either for city use or for calls to the office.

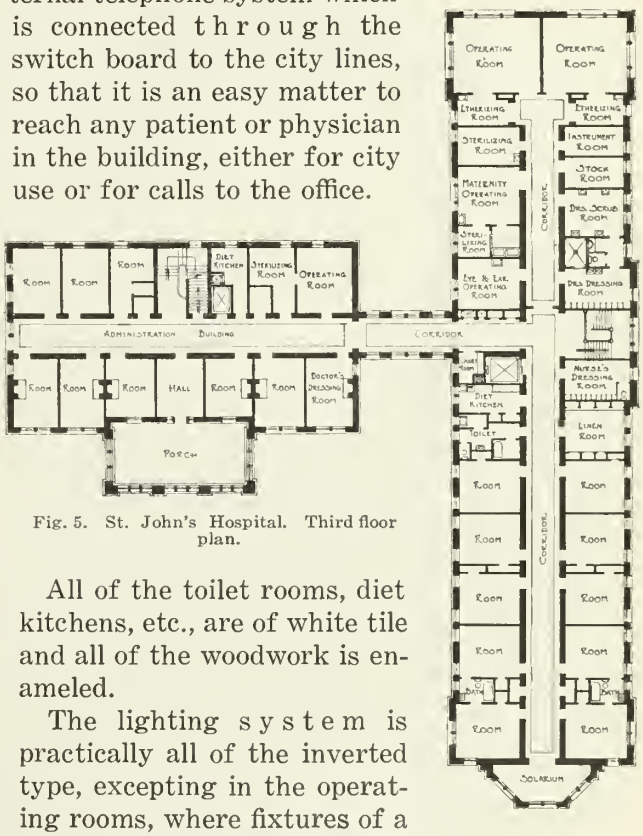


Fig. 5. St. John's Hospital. Third floor plan.

All of the toilet rooms, diet kitchens, etc., are of white tile and all of the woodwork is enameled.

The lighting system is practically all of the inverted type, excepting in the operating rooms, where fixtures of a special design have been installed.

The hospital has been equipped with the most modern porcelain plumbing fixtures and has in every way been made as complete and sanitary as possible.

The history of hospitals, especially in the Occident, is down to the end of the twelfth century closely connected with that of the xenodochia. In the western countries separate institutions were established chiefly through the efforts of Innocent III., and the founding by him of the Hospital San Spirits in Rome in 1204, which served as model for numerous similar institutions in all Christian countries, mostly under the same name, may be considered as the beginning of the history of hospitals in the Occident.—C. d'Elvert.

The MODERN HOSPITAL

Editorial Office . . . 6 North Michigan Ave., Chicago
Business Office . . . Metropolitan Building, St. Louis

EDITORS.

Henry M. Hurd . . . . . Fidelity Building, Baltimore
Frederic A. Washburn . Mass. General Hospital, Boston
Winford H. Smith . . Johns Hopkins Hospital, Baltimore
S. S. Goldwater . . . . Mt. Sinai Hospital, New York
W. L. Babcock . . . . . Grace Hospital, Detroit
John A. Hornsby . . 6 North Michigan Ave., Chicago

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Domestic rates include United States, Cuba, Mexico, Porto Rico, Canal Zone, Hawaii and Philippines.

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## Advantages of the Budget System

The question of balancing income and outgo in the receipts and expenditures of hospitals, and at the same time doing equal and exact justice to the claims of every department, is often a puzzling one to hospital managers. Many managers, in fact, resemble the unjust judge in the parable; they become weary of the importunate demands of more clamorous departments, which "trouble" them exceedingly and will not be denied, and eventually yield and appropriate to them a larger proportion of the funds than they ought to have, and a correspondingly lessened amount to equally deserving but more modest departments. In this way grave injustice is frequently done, and a premium is placed on selfishness, self-assertion, and clamor.

The only method to prevent such mistakes is through the adoption of the so-called budget system, by which, after careful consideration of the claims of all departments and an equally careful estimate of probable income, there is assigned to each department yearly in advance the portion of the income set aside for its support. The managers sit down quietly to consider impartially the claims of all, and attempt to do equal and exact justice to all departments. To this practice it is often objected that the needs of departments vary from year to year and that special emergencies may create unusual demands. This is undoubtedly true, but it is no less true that emergencies should be dealt with when they arrive. To grant a larger appropriation than is actually required by a department to provide for a possible emergency which may never occur only creates a situation of which the selfish and inconsiderate will inevitably take advantage. Every budget should make provision for a general emergency fund, to be expended only in emergencies under the exclusive oversight and direction of the managing board. If otherwise provided, there is always danger that emergencies will be devised or discovered to prevent any return of funds to the hospital treasury. No budget can make provision against fires, tornadoes, explosions, or other unforeseen accidents in a large hospital. Such emergencies should be dealt with when they are encountered.

The budget, then, is a financial sketch, an estimate, an outlook, and often a bold facing of the financial situation. It gives certainty and precision to hospital expenditures. It substitutes practical business ability for the so-called "life of faith" which has so often marked the career of many charitable institutions and not of hospitals alone. Such faith is a source of weakness and extravagance and tends to ultimate ruin, and should be abandoned. Every hospital should know how it stands financially every year at the beginning of the year, and the only secure method is by the adoption of a definite annual budget to control expenditures.

HENRY M. HURD.

## Dr. Lambert's Paper

On other pages of this number will be found a paper by Dr. Samuel Lambert, dean of the College of Physicians and Surgeons of Columbia University, which is a study of plans for a large teaching hospital, intended as a preliminary or guiding plan for the proposed new Presbyterian Hospital.

This paper is most timely just now, when prosperity in this country is commencing to release funds for hospital expansion, and just when, too, we are trying to disentangle our hospital architecture from certain European standards that are not only being discarded by the countries in which they originated, but which never contemplated conditions under which American hospitals must do their work.

Let not architects, designers, and administrators of small hospitals dismiss Dr. Lambert's paper as applying only to a great teaching institution, and consequently of no interest to them. As a matter of fact, so far as the patient and his care are concerned, there is no difference whatever be-

tween a ten-bed and a thousand-bed hospital; the requirements of light, air, nursing attention, and medical service are precisely the same, the only difference being the processes, architectural and economical, by which the end is to be attained.

Dr. Lambert has given us some studies of the ward unit, which are most illuminating; perhaps his plans are overelaborate for the purposes of the small hospital. But what he plans to do for his patient, the small hospital must do for its, and he is planning to do it in the way that will save much time, always convertible into terms of money, not only for the teaching and service medical staff, but for the administrative forces.

This unit plan of Dr. Lambert's is worthy of very careful study by all those who must bear a share in the responsibility for hospital construction in the near future; not only the unit itself as an independent thing, but its relation to other features that must serve it—the laboratory of pathology, the x-ray rooms, the diet kitchens, the sterilizer equipment, and the nursing conveniences.

Let us commend this paper to every reader of THE MODERN HOSPITAL as one of the most studiously constructive pieces of hospital planning of recent years. The paper was written for and published in the Columbia University *Quarterly*, to which we are indebted for the use of the illustrations.

### Proposed Massachusetts Inspection Law

With almost the regularity of the seasons a proposed change of the nursing laws of Massachusetts has come up before the Legislature of that state, and it seems almost puerile for so small a difference to keep the hospital and nursing professions apart. The bone of contention at this particular time is the following provision:

"The board (that is, the board of registration) shall have authority under this section to investigate at any time the training schools for nurses in this commonwealth for the purpose of determining their fitness and efficiency, as shown by their general equipment, by the character, the methods, and the extent of instruction given therein.

"For the purpose of conducting this investigation, the board may employ a person legally entitled to R. N. This selection shall be made from names presented by the Massachusetts State Nurses' Association."

The existing law provides that a nurse, to enjoy the title of R. N., must have had two years' training in an approved training school and must have been granted a diploma by that school before applying for the examination at the hands of the state board.

It seems to us that the two contentions in this whole matter are (1) the qualifications of the nurse who is employed for this inspection work, and (2) the authority of this nurse to order any changes that she thinks ought to be made.

The hospital people who have opposed this law, and also many members of the medical profession, including the chairman of the State Board of Registration, Dr. Charles H. Cook, contend that a nurse who has had no further preparation than the two years of study in a training school could not possibly be qualified to pass on the efficiency of the methods or the sufficiency of the facilities for the training of pupil nurses. These groups of people also doubt whether one who has had no other training than that of a nurse is qualified to pass on the mechanical equipment of a hospital—for instance, its architectural arrangement, its plumbing, and the sanitary devices.

It occurs to us that the whole matter could be most intelligently settled if all parties could agree that the woman employed as inspector on this work must have had at least five years' executive experience at the head of an approved hospital. A nurse who has specialized in dietetics could not possibly be a good inspector under this law because she would aggrandize her own specialty, and the same would be true of any nurse who had specialized in any one thing; but the woman who has been superintendent of a recognized hospital for as long a time as five years would have learned to judge of the value of the different departments of the institution, she would have learned the difficulties in the way of making changes, and she would also have learned what changes it was possible to make for the convenient teaching of pupil nurses within the financial limitations of the institution involved.

If this change in the qualifications of the training school inspector could be agreed on, the rest of it would be very easy. It is very certain that the hospitals cannot have too much inspection—of the right sort.

### Autopsies Increase in Number

The first annual report of the Peter Bent Brigham Hospital has just been issued. It is an inspiring chronicle of progress from cover to cover, a progress of the kind that means very much in hospital efficiency in this country. It is fortunate that there are such hospitals as the Peter Bent Brigham, whose endowments afford opportunities for the kind of work we all know should be done, but for which most hospitals do not have the funds.

There is one particular feature in the Peter Bent Brigham report that seems to overshadow everything else, viz.—the large number of autop-

sies available for a study by the scientific staff. There were 252 deaths in the hospital since the institution was opened for the admission of a few patients in January, 1913. These deaths yielded 147 autopsies, or 58.5 percent, which is a phenomenal percentage of autopsies for this country, and is eloquent of the fact that we are making progress toward a time when all post-mortem conditions can be made available to the scientific world for study and comparison.

These figures, 58.5 percent of autopsies, are not approached in this country, excepting by Johns Hopkins Hospital, which in one year attained 62.6 percent; but the Massachusetts General Hospital, whose staff is most active and inquiring in a scientific way, during the last year available for comparison—viz., 1911—had only 30.1 percent. The University of California Hospital in 1912 had 56.8 percent; but the above three institutions are, first of all, teaching hospitals, and, secondarily, havens wherein the sick may be cured and where they may find the comforts and even luxuries attained in the modern institution.

But, on the other hand, Bellevue, that ought to have had a large percentage of autopsies, had only 11.8 percent; the Boston City Hospital, another municipal institution, had only 14.7, while most of the private institutions run very low in the percentage of autopsies, as, for instance, the Presbyterian Hospital, New York, that had 24.5 percent; the New York Hospital, 20.6 percent; St. Luke's Hospital, New York, 14.4 percent; and Mount Sinai, limited in the number of its autopsies by the prejudices of its orthodox Jewish patients, had only 7.3 percent.

In Europe the percentages are very high, and even in Canada they bespeak a liberal and inquiring attitude on the part of the people, especially the scientific people, that interprets itself in the very definite leadership in pathology that those countries still hold; as, for instance, the Montreal General Hospital had 86.4; the Royal Victoria Hospital of Montreal, 67.8; the University College Hospital of London, 84.4; St. Thomas Hospital, London, 77.4; while the German hospitals run into the 90's, with the Allgemeines Krankenhaus of Vienna topping the list with .97, the University Hospital of Breslau following closely with 93.4, and the Charite Hospital of Berlin with 90.3.

If the Peter Bent Brigham can keep on advancing its percentages of post-mortems relative to the total number of deaths, it will be an inspiring lesson to the rest of us in this country, and it will do more for correct diagnosis than almost any other one thing that that fine institution could contribute toward the sum total of our knowledge.

Of course, autopsies mean nothing unless they are correlated with a system of the very best bedside and laboratory records, but in these particulars also the Peter Bent Brigham Hospital can excel.

### County Tuberculosis Hospitals

The following news note in the Chicago *Herald* of January 5, of the present year, is significant:

"The Belleville (Ill.) Tuberculosis Hospital has not had a patient since it was built two and a half years ago. Monday the managing physician resigned; the hospital closed Tuesday."

Some time ago THE MODERN HOSPITAL urged on communities all over this country to insist on the passage of laws in their several states providing for the care of tuberculosis patients in hospitals built and operated by the states themselves and located where they would do the most good. There is no doubt whatever that many county and local tuberculosis hospitals are not making the best possible use of the money invested in them in the propaganda against the "great white plague." Notoriously, tuberculosis is more prevalent where there are poor people and where those afflicted can the least afford the expense of building and operating hospitals.

THE MODERN HOSPITAL believes that tuberculosis ought to be treated, from the standpoint of the public health, precisely as insanity is, and that localities should not be burdened with the creation and maintenance of these hospitals. No doubt a great many more tuberculosis hospitals must be built than are in existence today, and only a very small percentage of the work is being done that must be done if the most insidious and threatening disease of our age is to be controlled and terminated, but it is not helping in this work any to build hospitals for this class of patients where there are no patients and to leave large, thickly populated, helpless communities unprotected by properly built and properly equipped hospitals.

Natural ventilation, or that by open windows and open fireplaces, is the only efficient means for procuring the life-spring of the sick—fresh air; but to obtain this the ward should be at least fifteen to sixteen feet high, and the distance between the opposite windows not more than thirty feet.—Florence Nightingale.

Perhaps the most delicate test of sanitary conditions in hospitals is afforded by the progress and termination of surgical cases after operation, together with the complications which they present. The statistics of medical cases, although affording important data for our purpose, are of themselves imperfect indices of healthfulness of wards, but it is otherwise with operation cases.—Florence Nightingale.

## COMPULSORY HEALTH INSURANCE FOR EVERY INDIVIDUAL

### Preventive Medicine Demands That All Shall Have Access to Sound Advice as to Physical Condition and Treatment in Incipient Stages

BY OLGA S. HALSEY, M. A., NEW YORK

Health insurance offers a new method of conserving health, both by curing illness and by preventing its occurrence. But health insurance measures now before the legislatures of Massachusetts and New York, and in operation in Germany, Great Britain, and eight other European countries, is not the voluntary insurance already slightly developed in this country, but is made obligatory for wage earners. Under the haphazard voluntary system at present existing, many of those most in need of protection have little or no medical assistance unless they accept charity. In contrast to this, the introduction of the compulsory feature makes the new method of insurance a more effective agent in health conservation, since it protects all workers. Thus the bill now before the New York Legislature provides that all manual workers and all others earning less than $100 a month shall be insured, and that each insured person shall receive necessary medical care, cash benefit for two-thirds of wages for a maximum of twenty-six weeks, while dependents shall receive a small funeral benefit on the death of the wage earner. The more adequate care for the illness of wage earners will be an important factor in conserving health and prolonging life. Moreover the contribution of the employer toward the cost of insurance, as provided in the New York and the Massachusetts bills, will give a financial incentive to improve sanitary conditions, thereby decreasing the amount of sickness and his expenditure for insurance. Thus, in general, the measure is both a cure and a preventive of illness.

The prolongation of life expectancy may be accomplished by three methods—by improving the chances of life for the newly-born child, by minimizing the chances of death from contagious diseases, or by diminishing the deaths from diseases of adult life. Although a marked improvement in the average length of life has occurred during the last fifty years, it is largely due to the decreased death rate at the younger ages of life.

Although the expectation of life for the newly-born child in Massachusetts has increased practically 30 percent during the last century, due to better sanitation, better knowledge and care of the family, and care of the feeding and growth of children, there is room for further improvement. The experience at the Fullham Infirmary is cited to show that the number of infants born with marked physical inferiority is greatly diminished when the child receives prenatal care, or when financial or sanitary conditions are more favorable. Dr. Abraham Jacobi, in his presidential address to the American Medical Association, concluded that the least that could be done was to reduce the mother's working hours during pregnancy and to afford a prolonged rest following birth. Under a system of health insurance it is possible to provide medical care and a cash payment for insured women unable to work during pregnancy, as well as a cash benefit for a limited period following confinement. Provision may even be made for a nursing benefit paid in cash to employed women who remain at home to nurse their babies.

Infant mortality may also be reduced by an improvement in the obstetrical aid. Obviously, progress might be made in the rural districts of Pennsylvania, where remote from hospitals there are annually 100,000 births, attended by underpaid doctors. Of each one hundred deaths of children under one year, two and two-tenths are due to injuries at birth, ten occur on the first day, and thirty-four during the first month. Most of these children might be saved through more perfect knowledge and by more skillful attendance than half the population now receive. This situation might be bettered through provision in a health insurance system for obstetrical aid to insured women and to the wives of insured men. The legal right to such care will bring the evils to the front in this country, where 40 percent of the births are now attended by midwives, often inadequately trained and insufficiently supervised, and will place a very real premium on the improvement of the service, and at the same time will provide an effective method of control. Health insurance not only offers this opportunity to decrease infant mortality, but it may also decrease the deaths due to contagious diseases. If the members of the family of the insured are provided with medical care, the doctor will be consulted more frequently than today in many wage earners' families, with the chance of discovering contagious diseases in their incipient stage; thus a scarlet fever epidemic resulting in fifty deaths was traceable to a single case of the disease in a child of the local milk dealer, an epidemic which might have been prevented with adequate medical care.

To prolong life by preventing the diseases of adult life is the unique function of health insurance, a task which is becoming increasingly urgent in this country, for there is a marked increase in the death rate at ages over 45, although deaths are decreasing in the early years of life. Even though an increase in adult mortality is perhaps a natural accompaniment of the diminished infant mortality, the very rapid rate of increase of deaths from diseases of the heart, blood vessels, kidneys, and nervous and digestive systems (100 percent in thirty years, according to the mortality tables of Massachusetts and New Jersey) is sufficient to cause alarm. This problem, not duplicated in Europe, is a peculiarly American problem, and one to which earnest attention should be directed. One remedy—physical examinations to discover the approach of future trouble—has been promoted by the Life Extension Institute, which has been a pioneer in calling attention to these facts. If physical examinations were universal, it is estimated it would add five years to the average life of persons between 45 and 50. But, while the system of physical examinations is excellent as far as it goes, it leaves the most important gap unprovided for—namely, the provision of the needed medical treatment; thus out of 800 garment workers examined in New York city, 62 percent were found to be in need of medical attendance; 100 percent of the employees in a New York city bank were found to be on the sure road to diseases of the heart, lungs, kidneys, or blood vessels. Unless medical care is offered, the rare discovery of impending illness is of no avail, since many are unable to command the necessary treatment. That other wage earners do not have medical attendance has been revealed in a recent study, which shows that 40 percent of those actually ill had no attending physician.

Health insurance can check these degenerative diseases by providing medical care for the insured workers. The accessibility of the doctor will increase the detection of diseases in their incipient stages. What may be accomplished in the field of tuberculosis prevention alone is shown in the estimate that today in New York city, in spite of the well-organized antituberculosis campaign, there are 50,000 cases. Of these 50,000, only 37,000 are known to the Board of Health, and only 24,200 are known to be under treatment. This one disease the German in-

validity funds have found to be one of the greatest causes of permanent invalidity and to absorb two-thirds of its expenditures. The result has been a preventive campaign of exceptional importance, undertaken through lectures and persistent efforts both to restore the sick worker to health and to prevent the disease by improving the housing conditions.

It is not enough that a doctor be provided—surgeons, nurses, hospital care, and the necessary medicines and surgical appliances ought also to be available to the insured; and, to make it possible for the worker to benefit by this treatment, it is customary to give the sick worker, during inability to work, a cash benefit, for recovery will obviously be retarded if the patient suffers hardship on account of the loss of wages during his enforced idleness. Signs are not lacking that this provision has materially reduced mortality. The health insurance of the German empire has been a most important factor in the antituberculosis campaign of that country, which in 1884 had a higher death rate from tuberculosis than the United States, but which today, as a result, has a more favorable rate than this country. In Germany, too, the decreasing mortality in the later age periods reveals a diminishing death rate from degenerative diseases. Moreover, the duration of life has increased twice as rapidly in Germany, where health insurance has been in operation thirty-three years, as it has in other countries. Irving Fisher says in his notable monograph, "It is perhaps no accident that the minimum rate obtains in Prussia, which is probably the most progressive country in the discovery and application of scientific medicine."

In our own country, where the Metropolitan Life Insurance Company has instituted a system for its industrial policy holders (without any accessories) between the years of 1911 and 1914, there has been a marked decrease in the mortality of its members, a decrease which is greater than that for the general population. Dr. Louis I. Dublin, the well-known statistician of the company, states: "This strongly suggests that the educational campaign for better personal hygiene which the company has developed among its industrial policy holders, and especially the work of the nursing service, are already bearing fruit in improving the mortality situation. The expectation is largely confirmed by the very significant finding that the causes of death which have shown the greatest reduction are those which have been most prominently represented in the records of the visiting nurse service."

If nursing service alone can produce this result in this country, we may confidently expect a far greater reduction in mortality from the combined effects of more adequate provision for maternity care, for cash benefit during illness, and full medical care, including medical, surgical, and nursing attendance and hospital treatment. Such are some of the possibilities for life extension offered by the health insurance bills now before the New York and Massachusetts legislatures.

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The Woman's Hospital of Philadelphia has a fine new children's building nearing completion. As soon as the new structure may be occupied, the training school of the institution will offer a special course for nursery maids. The Woman's Hospital was established fifty-five years ago, and 532 babies were born in its maternity ward in 1914. A feature of the new building will be electrically heated beds for infants, with provisions for maintaining the temperature at the desired degree. A milk room, where all milk used may be modified to suit the hospital requirements, is being fitted up. There will be also an open-air ward and a sun room, with steam pipes beneath the floors to make them comfortable in cold weather.

## THE LORD & TAYLOR HOSPITAL FOR EMPLOYEES, NEW YORK

### An Industrial Institution Planned to Meet All the Requirements of Modern Medicine and Social Service

One of the most attractive and completely equipped of the small hospitals in New York City is situated on the eleventh floor of Lord & Taylor's department store, corner of 38th street and Fifth avenue. This entire floor is dedicated to welfare work for the employees and includes not only the hospital, the eye, nose, throat, and foot clinics, but also a restaurant, rest room, open-air promenade, gymnasium and school room for the continuation work

Fig. 1. Operating room.

for the check boys and girls. The service rendered by the hospital in the old store on Broadway justified this more complete equipment for welfare work in the new establishment. A nurse, always in attendance at the hospital, enters the patients' names in the reception room and passes them into the doctor's office immediately adjoining.

The doctor, on duty part of each day, makes his diag-

Fig. 2. Eye, ear, nose, and throat clinic.

nosis, prescribes his treatment and issues his pass—if that be necessary. This is recorded on a card, which is carefully filed for further reference.

From the doctor's office the patient passes either to the right into the men's ward or to the left into a small operating room and thence into the women's ward.

The operating and sterilizing rooms are completely

equipped with instruments and modern appliances. The floors, walls and ceilings are of white tiling.

At the farther end of the women's ward is a small laboratory for urinalysis. The floors of both wards are covered with linoleum, and the walls and ceilings tinted a soft green.

The eye, ear, nose and throat clinic is utilized in the forenoons for dental work.

Adjoining the hospital suite is a room for chiropody.

Fig. 3. The chiropodist at work.

The entire suite of rooms comprising the hospital is amply lighted by western windows which overlook the lower surrounding buildings and flood the wards with sunlight during the afternoons.

Opening from the operating room is a small chamber containing a stretcher for use in emergency cases.

Such briefly are the arrangements in Lord & Taylor's store for the care of sick employees.

To the hospital come all the trivial accident cases for treatment, and through proper care of cuts and scratches infection is almost invariably avoided. Care is also taken of the girls who have headaches, dysmenorrhœa, attacks of acute indigestion, etc., who need rest in a place free from interruption. Customers who have fainted are brought to the hospital for treatment. They also come to the eleventh floor for treatment of trivial injuries, or perhaps only for a short rest in the midst of their shopping.

All applicants for positions are examined by the doctor in charge of the hospital before acceptance, thus minimizing the risk of infection of employees and weeding out the physically unfit.

The gymnasium is as perfectly equipped as the hospital, where the women can come during their lunch hour (a full sixty minutes) and have a dance or play games.

Fig. 4. Roof garden for employees.

Last year a women's gymnasium class met one evening a week for ten consecutive weeks. In the summer and early autumn, however, the women prefer the roof garden and enjoy to the full the fresh air and sunlight.

In the pleasant restaurant opening from the roof garden wholesome food is served employees at a reasonable price. The method of service is the cafeteria. The menu is pasted outside the room, and usually contains a variety of fresh vegetables, fruit and salads.

SAMPLE MENU

| | | | |
|---|---|---|---|
| Soup julienne | 5c | Tapioca pudding | 5c |
| Corned beef and potatoes | 14c | Apple cake | 5c |
| Frankfurters and sauerkraut | 13c | Baked apple | 5c |
| Scalloped tomatoes | 5c | Pie, cake | 5c |
| Buttered beets | 5c | Coffee | 5c |
| Cabbage salad | 5c | Tea | 5c |
| Pea salad | 5c | Milk | 5c |

Perhaps the rooms most used are the women's rest room and men's smoking room. These rooms are fitted with comfortable lounging and easy chairs and are filled with employees from 11 to 2 o'clock in the afternoon. Wonderfully well ventilated, with the sunlight streaming in from the east and south, it is not remarkable that employees flock to these rooms for a quiet half hour at noon.

KRISTINE MANN, M. D.

### Statistics From Seventeen London Hospitals

The following interesting table was published in a recent issue of *The Hospital*, London:

AVERAGE OCCUPANCY OF BEDS AND STAY OF IN-PATIENTS IN SEVENTEEN GENERAL HOSPITALS, 1910-1914

| | Total beds | 1910 | | 1911 | | 1912 | | 1913 | | 1914 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Average occupied | Average stay | Average occupied | Average stay | Average occupied | Average stay | Average occupied | Average stay | Average occupied | Average stay |
| Charing Cross | 250 | 139 | 23 | 135 | 23 | 137 | 22 | 141 | 21 | 146 | 21 |
| German | 154 | 117 | 25 | 97[1] | 19 | 101[1] | 19 | 128 | 20 | 133 | 23 |
| Great Northern Central | 209 | 152 | 27 | 163 | 27 | 170 | 26 | 176 | 27 | 168 | 26 |
| Guy's | 644 | 533 | 22 | 545 | 21 | 539 | 21 | 526 | 20 | 522 | 20 |
| King's College | 248 | 188 | 27 | 187 | 24 | 186 | 24 | 129[1] | 21 | 177 | 21 |
| London | 922 | 803 | 20 | 821 | 18 | 817 | 18 | 795 | 17 | 800 | 16 |
| Metropolitan | 123 | 115 | 24 | 110 | 21 | 105 | 22 | 109 | 24 | 111 | 23 |
| Middlesex | 350 | 303 | 20 | 277 | 20 | 331 | 19 | 337 | 20 | 306 | 19 |
| Prince of Wales' | 125 | 107 | 22 | 113 | 22 | 114 | 23 | 113 | 20 | 114 | 24 |
| Royal Free | 175 | 144 | 22 | 139 | 22 | 141 | 22 | 143 | 20 | 146 | 22 |
| St. George's | 334 | No return | | 294 | 23 | 318 | 23 | 317 | 23 | 314 | 24 |
| St. Mary's | 305 | 275 | 23 | 271 | 22 | 247[1] | 22 | 264 | 21 | 249 | 22 |
| St. Thomas' | 632 | 518 | 25 | 511 | 23 | 532 | 22 | 548 | 21 | 531 | 21 |
| Seamen's | 256 | 221 | 44 | 241 | 42 | 234 | 43 | 221 | 42 | 195 | 44 |
| University College | 305 | 274 | 25 | 277 | 24 | 279 | 24 | 280 | 24 | 266 | 22 |
| West London | 160 | 147 | 22 | 145 | 20 | 147 | 22 | 151 | 22 | 142 | 18 |
| Westminster | 213 | 184 | 25 | 170 | 25 | 181 | 25 | 183 | 23 | 174 | 25 |

[1]Special reason for low average.

# CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
*Army Medical Museum and Library, Office of the Surgeon-General, United States Army.*

**Small Pavilions as Annexes to Hospitals for the Defense against Insect Parasites** (Padiglioncini annessi agli ospedali per la difesa entomoparassitaria). Dr. E. Bertarelli. Ospedale Maggiore, Milano, 1915, III, No. 9.

All the belligerent nations participating in the present war had to take measures to protect their soldiers against parasitic insects. Among these the pediculi, as the carriers of typhus fever, are the most dangerous. In France the problem was solved by the erection of small pavilions in front of the entrances to military hospitals. This pavilion is usually 30 feet long, 10 feet wide, and 10 feet high. In this pavilion the patient, before entering the hospital, is freed from all vermin. His hair is cut short, he is shaved, given a warm alkaline bath, and his clothes are carefully disinfected.

**Principles of Surgical Nursing.** Frederick G. Warnshuis, M. D. The Nursing Times, 1916, XII, No. 577.

The author presents a discussion on the authority in operating rooms and a division of labor to be imposed on each individual in order to promote rapid and accurate work. The division recommended is as follows: surgeon—the recognized head, and to whom all others are subservient; first assistant—the surgeon's immediate representative, to carry out the surgeon's orders; second assistant—to see that all required instruments, needles, and sutures are promptly provided for the surgeon, to hold retractors, to sponge away blood, and act as an assistant to the first assistant; third assistant—to act as an assistant to the first and second assistant, to perform work of final sterilization and draping of the field; anesthetist—to administer the anesthetic selected by the surgeon; surgical superior—to be by preference a trained surgical nurse and to assume charge of all nurses engaged in the operation, and consequently to be held responsible for their work. Dr. Warnshuis emphasizes the duties and demeanor of surgical nurses.

**The Establishment of Dispensaries for the Promotion of Social Hygiene and for the Protection against Tuberculosis** (Sur l'institution de dispensaires d'hygiène sociale et de préservation antituberculeuse). P. Strauss. Revue d'hygiène, Paris, 1915, XXXVII, No. 9.

At the opening of the Léon-Bourgois Dispensary at Paris, December 12, 1913, President Poincaré laid down the lines for the struggle against tuberculosis as follows: "We must establish in all large cities tuberculosis dispensaries accessible to all those who are suffering from or are threatened with tuberculosis. We must not be satisfied with receiving and examining poor patients; we must go to their homes, examine the living conditions, and get information about the resources of the family; we must give hygienic advice, and protect wife and children from infection. We must assist individuals and families with financial and other means. Each dispensary should contain a hospital division devoted exclusively to tuberculous patients. In connection with this institution a tuberculosis hospital should be established in the suburbs, to which patients who are in need of it may be sent."

Such institutions as the President of France had in mind have been established in a number of large cities, and the tuberculosis dispensaries of Paris, Lille, and Lyons have accomplished a remarkable work in the struggle against the dreaded disease. A bill is now before the French legislative bodies which is intended to increase the number of these tuberculosis dispensaries and to make them institutions of public hygiene.

**Sanitation of Vera Cruz, Mexico, During the American Occupation.** Wm. D. Wrightson, Sanitary Engineer United States Army. Southern Med. Jour., 1915, VIII, No. 12.

In this comprehensive survey of Vera Cruz from the standpoint of sanitation, the writer reports as follows on hospitals:

The hospitals were in a very dirty, not to say unsanitary, condition and sadly in need of repair. The walls have been whitewashed, and, wherever found necessary, painted; the windows and doors properly screened and all water leaks stopped. It was found necessary to disinfect the beds and appurtenances. Clean and wholesome food is now provided. It is not intended to give the impression that the food has been of unwholesome quality heretofore, but the patients admit that there is much improvement.

There are three hospitals. First, San Sebastian, the principal one, is devoted to the treatment of males. It is provided with about 300 beds for charity cases; the wards are roomy and well ventilated, and could be arranged to accommodate about 100 more patients. It is well located in the center of the town near the business section, and is accessible from all parts. The average number of patients treated daily is about 175. All classes of diseases are treated, and a well-arranged ward for the care of yellow fever, as well as tubercular cases, is provided. Rooms are also available for pay patients, and it is here the Mexican soldiers wounded in action at the time of the American occupation were taken care of by the hands of their erstwhile enemies. San Sebastian is a very fine old building, and was erected over three hundred years ago. It has been used as a hospital for more than one hundred years, but was originally built as a convent.

Second, Loreto Hospital, set aside for the treatment of women and children. As compared with San Sebastian, it is new, having been erected but seventy-five years ago. All classes of diseases are treated here. It is primarily a charity hospital as, in fact, are all of them, though rooms are provided for the treatment of pay patients. An average of about 100 persons receive treatment at this hospital daily. It is also provided with special wards for the treatment of yellow fever. The wards and rooms are large and airy. This hospital operates an outdoor free clinic for the treatment, examination, and control of public women.

Third, The Lazaretto, as its name indicates, the hospital set aside for the treatment of malignant diseases, though, in the case of this one, smallpox alone has been its specialty. Patients of both sexes of all conditions of moral and physical servitude are treated indiscriminately. It is located on the main line of the railroad about one and one-half miles from the city proper, and, though it is securely isolated, ample means of rapid transportation and ready access are afforded. It is interesting to note that Laza-

retto was originally constructed for a purpose entirely aside from the alleviation of human suffering, having been first used as a fort.

The Zamora Orphan Asylum is operated in connection with the hospitals. It is a handsome building located near the center of the town and in close proximity to San Sebastian Hospital. It shelters about 120 orphans of both sexes, who are afforded all the advantages of instruction in trades and various arts.

**A Few Hints on Hospital Construction** (Einige Ratschläge für den Bau von Krankenhäusern). Dr. W. Block. Deutsche med. Wchnschr., Leipzig and Berlin, 1915, XLI, No. 39.

In corridor buildings the central corridor should not be less than 2.50 meters wide in order to give ample room for the transportation of patients. The elevator for the patients should be so constructed that they can be transferred to it directly from the street. The best floor covering is cork linoleum, as it is noiseless. To prevent sound transmission from one room to the other, the wall should be covered on both sides with cork plates. Double windows have a great advantage, as they keep the rooms warmer and make a good ventilation possible. By raising the lower part of the outer window and lowering the upper part of the inner window we obtain efficient ventilation, especially if the radiators are placed below the windows. Warm water heating is preferable to low-pressure steam heating. Laundry shafts are hard to keep clean and disseminate disagreeable odors. It is best to collect the laundry during the day in large well-covered tin tubs and transfer them to the basement by means of a special elevator. The points mentioned here have been realized in the new Hebrew Hospital in Hanover and have proved very successful.

**How to Prepare an Annual Report.** The Hospital, London, 1915, LIX, No. 1539.

"Some hospitals have a knack of obtaining wealth, and some have a way of seeming to have wealth thrust upon them; some are lucky, some are unlucky; some are like books with a good title—they go on and prosper—while others are unfortunately named and appear to be cursed at their birth," writes a hospital secretary in giving some excellent advice on the drafting of annual reports. He refers to the reports of some institutions as nothing but a weary repetition of previous year's efforts, "the mixture as before," and insists that, although they must contain a straightforward statement of affairs, success or failure should be written early in the tale, with reasons for gain or loss (neither gloating over the former nor mourning over the latter). They should then proceed, as briefly as possible, without forfeiting an opportunity or missing a chance that may never come again, and always be informing, but never dull.

**Specializing in Hospitals and Its Disadvantages** (Over specialiseering in ziekeninrichtingen en hare schaduwzijden). Dr. Walsem. Ziekenhuis, Amsterdam, 1915, VI, No. 10.

The advantages of special hospitals for certain diseases consist in a better service resulting from the division of labor. Medical science has developed so greatly in modern times that it is impossible for any man to command the whole field. The technic of the means and aids in diagnosis and treatment can be acquired only by long practice and experience. But specialization in hospitals has also its disadvantages. Some of these disadvantages affect especially the patient. The fact that a man has been treated at a tuberculosis hospital may greatly reduce his chances of obtaining a position in business, or a person who has been in a sanatorium for nervous diseases is looked on with some distrust in the business world. The very fact that a patient is treated at such institutions exerts frequently an unfavorable influence on the cure. The general hospital is in these respects superior to special hospitals. By establishing special divisions for certain diseases, it obtains all the advantages of special hospitals without the inconveniences and disadvantages that go with such institutions.

**Endowment of American College of Surgeons.** John G. Bowman, Director. Surgery, Gynecology and Obstetrics, 1916, XXII, No. 1.

The American College of Surgeons has secured from its fellows an endowment fund of $500,000, to be held in perpetuity, only the income to be used to advance the purposes of the college.

The primary aim of the college is the training of specialists in the practice of surgery, and the director, from the following, thoroughly appreciates that the realization of such a purpose depends largely on hospital efficiency and cooperation:

"Inasmuch as proper training in surgery is inseparably involved with the conduct and efficiency of hospitals, the college will seek accurate data on all matters which relate to hospitals. From time to time it will publish studies on hospital problems, the purpose being always to be helpful to the hospitals. These publications, further, will inform recent medical graduates as to where they may seek adequate general or special training in surgery. To be concrete, the college will deal with such problems as (1) the proper equipment for medical diagnosis—e. g., well-equipped laboratories for chemical, pathological, and x-ray work—(2) the proper forms for case histories and the facilities for keeping these records, (3) the management and the curricula of the nurses' training schools, (4) the specialization essential in any well-organized hospital."

**The Braun Apparatus for the Graduated Addition of Disinfectants to the Sewage of Hospitals** (L'apparato Braun per l'aggiunta tarata di disinfettanti di liquami luridi degli ospedali). Dr. E. Bertarelli. Ospedale Maggiore, Milano, 1915, III, No. 9.

Of all the methods so far proposed for the treatment of hospital sewage, the one which has given the best results and has proved the most economical is the treatment with chlorid of lime. Phelps, of Boston, states that even the addition of one part of chlorid of lime to 93,000 parts of sewage is sufficient to produce a thorough disinfection of the latter. But in practice there is some difficulty in thoroughly mixing the liquids so that the disinfectant reaches all portions of the sewage.

The apparatus of Ing. Braun comes nearest to solving this problem. It consists of a cylindrical tank of reinforced cement, which contains the solution of chlorid of lime (1:10 to 1:50). This tank holds usually 200 liters. Another tank holding 100 liters is placed a little below the first and receives the sewage to be disinfected. This second tank fills and empties itself automatically, withdrawing during each performance ¼ liter of disinfectant from the upper tank. By a simple device the quantity of the disinfectant to be aspirated can be diminished or increased. If 250 c.c. of a solution of chlorid of lime of 1:50 is added to 100 liters of sewage, we obtain a solution of chlorid of lime in the liquid of 1:20,000. After the sewage has thus been treated it flows into a larger tank.

where it remains at least two hours and is then again automatically discharged. The most important part in the apparatus is the aspiration syphon, the upper end of which can be raised or lowered in order to aspirate a smaller or larger quantity of the disinfectant.

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**A Plea for Accurate Statistics in Infants' Institutions.** Henry Dwight, M. D. Archives of Pediatrics, 1915, XXXI, No. 10.

A discourse at length on the gravity of the present lack of statistical facts on file in children's hospitals. Dr. Dwight advises better and more complete histories, with a wider range of vital facts; a closer cooperation between the pediatrician and the institution covering the work. He proposes to reverse the entire method of taking histories in order to do away with useless information and to record that which can be analyzed in case of reference.

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**The Present State of the Battle Against Tuberculosis in Italy** (Lo stato presente della lotta contro la tubercolosi in Italia). Dr. P. Masucci. Giornale internaz. d. scienze med., Napoli, 1915, XXXVII, No. 17.

The beneficial influence of the sanatorium must solely be considered as an aid to the cure of tuberculosis; its favorable action is due to the well-recognized principle that hygienic conditions increase the resisting power of the organism. Brehmer, who has done so much for the development of the modern sanatorium, said: "The antitubercular sanatorium is hygiene of body and mind raised to its highest power." As to the tuberculosis hospitals, experiences of recent times have shown that isolation of patients with pulmonary tuberculosis is the best means to cure them and to prevent the spread of the disease.

The antitubercular dispensary was first conceived as a branch institution of the antitubercular sanatorium, but now its function is considered in almost all countries as chiefly prophylactic, and the number of these institutions has increased so rapidly that they must be considered the backbone of the antituberculosis movement. Here are gathered not only phthisics in the initial stages, but also great numbers of persons predisposed to pulmonary tuberculosis, who are taught how to prevent the disease. Besides, the antitubercular dispensary has become a center of coordination for a whole network of institutions intended to solve the problem from their various sides—people's sanatoriums, seaside hospitals, mountain colonies, open-air schools, etc. This institution thus forms the headquarters in the battle against tuberculosis.

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**The Need of Psychopathic Hospitals in Our Larger Cities.** Harold W. Wright, M. D. California State Jour. of Med., 1916, XIV, No. 1.

The author demonstrates the need of psychopathic hospitals as a factor in social economy as well as a real value to the individual. A number of miscellaneous cases are cited in which prompt diagnosis and proper treatment have either terminated the patient's hospital stay or resulted in commitment to an appropriate asylum, thereby resulting in a saving to the community.

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**Disinfection of Cuspidors** (La disinfezione delle sputacchiere). Dr. F. Maffi. Rivista d'igiene e san. pub., Parma, 1915, XXVI, No. 20.

The author made a series of experiments concerning the germicidal power of various disinfectants with regard to the tubercle bacillus. After having left the sputum in contact with the disinfectant for various periods of time, he inoculated guinea pigs with the liquid so treated. In a great number of cases the animals died after a longer or shorter period of time from tuberculosis. He comes to the following conclusions: the only safe methods of disinfection are (1) boiling the sputum for five minutes in water to which 2 percent of sodium carbonate has been added; (2) leaving the sputum in contact with the following solutions: 5-percent carbolic acid for twelve hours, corrosive sublimate (1:1,000) for twenty-four hours; 20-percent formalin for twenty-four hours; 10-percent lysol for twenty-four hours; 20-percent acetic acid for twelve hours. Absolutely inefficient are 20-percent sulphuric acid, 10-percent hermitin, 2-percent cyllin, 10-percent hydrochloric acid, though these disinfectants remain mixed with the sputum for more than twenty-four hours.

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**Another View on Ventilation.** Henry Sewall, M. D. Interstate Medical Jour., 1916, XXIII, No. 1.

Scientific research tends to destroy the chemical theory of ventilation and to introduce the conception that under none of the ordinary associations of life do the chemical changes induced in the air by respiration have any material physiological influence. The author believes that profound metabolic and physic dyscrasias are due to a rise of body temperature caused by physical factors—i. e., high temperature, humidity, and a possible lack of movement in the air. Dr. Sewall does not aim to present a new theory of ventilation, but rather to issue a caveat against too narrow a view of its principles.

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**Disinfection of Hospital Trains.** Illust. Kriegs-Chron. Daheim, Leipzig, 1915, No. 26.

Experiments have shown that high temperature combined with formalin vapors does not kill pus cocci, tetanus bacilli, and anthrax spores, though they were exposed to the disinfectant from three to six hours. The Germans have now devised a new method of disinfection for hospital trains. It consists in high temperature combined with a rapid withdrawal of moisture by the creation of a vacuum and with the use of formalin vapors. The apparatus is a large metal cylinder 23 meters long and 5 meters in diameter, and the covers at both ends can be hermetically closed. The car is pushed into this cylinder and the latter tightly closed. The apparatus is heated by steam by means of a system of tubes. The formalin apparatus is attached to the under side of the cylinder, and the air is pumped out of the cylinder by means of an electromotor connected with a vacuum pump. While the apparatus is heated, the air is gradually withdrawn until water begins to boil at 40° C. The sudden withdrawal of moisture is fatal to the bacteria. The injection of formalin vapors makes complete disinfection a certainty. After an exposure of the car to this treatment for five or six hours, no living germs could be found.

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In a recent lecture at the Children's Hospital, St. Louis, to an audience of fifty women, Dr. Henry Schwartz, of the Washington University Medical School, expressed the view that large cities should be divided into hospital districts and a hospital established in each district. Mothers-expectant in moderate circumstances should be sent to these hospitals, Dr. Schwartz declared, in order that they might have the proper care and be free from work or worry of any kind. Proper care at this time, he said, would do much toward strengthening and improving the race. Dr. Schwartz favors a law to prohibit the employment of mothers-expectant.

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# DEPARTMENT OF NURSING

Conducted by MISS ANNIE W. GOODRICH,
*Teachers' College, Columbia University, New York City.*

Please address items of news and inquiries regarding Department of Nursing to the editor of this department, Teachers' College, Columbia University, New York City.

## The Education of the Nurse

To undertake to edit the Department of Nursing in THE MODERN HOSPITAL is to assume a task rich in interest and opportunity, but fraught with responsibility. To follow effectively one who has not only most ably conducted the department, but has not less ably administered a large hospital while building up one of the most model and modern schools of nursing, is to impose a heavy tax on one's ability. But a not less heavy demand arises from the fact that, even as THE MODERN HOSPITAL is contributing in a large measure to the rapid and much needed standardization of hospitals, so it should also contribute to the equally needed standardization of nursing education. This contribution we deem it the part and privilege of the Department of Nursing to make. We approach the task with not less of trepidation than of interest. Of the many problems confronting us in the nursing field, none seem to us so pressing as this problem of nursing education. What shall be the content of nursing education is a question that we believe demands the careful, critical, and immediate consideration of those who are responsible for or who are directing schools of nursing, if the nurses are to, in any degree, measure up to their ever widening opportunity of service to the community.

A very superficial survey of schools of nursing presents them, even after nearly fifty years of existence, as singularly at variance with accepted systems of education in either cultural or vocational fields. The very methods that are responsible for the breaking down of the apprenticeship system are to be found today in these schools. Excessive hours of practice and meager hours of theory still obtain. A repetition of procedures far beyond the amount required to insure tactile skill and technical efficiency is the rule—not the exception. The disposition to lengthen a service for the pupil who adapts herself readily, and to curtail a service, no matter how valuable the experience, if the pupil does not immediately adjust herself to the problems of a new branch or department of work, is universal. To the tendency to sacrifice the capable apprentice to the needs of the individual shop has again and again been attributed the decrease in efficient workmen in the trades under the apprenticeship system. A comparison of the practical experience of any group of nurse students would show a great variability—a variability not due to the inevitable fluctuations of the hospital service alone, but to the fact that the student's experience is a matter of hospital expediency rather than of required education.

In schools and colleges, lectures and laboratory practice in any subject go hand in hand; in schools of nursing, the theoretical instruction sometimes precedes by many months the practical experience in any branch, or the reverse may be the case. Not infrequently, indeed, the course is limited to either theory or practice. All these conditions call loudly for readjustment, and we repeat that the content of nursing education cannot be too soon agreed on by all concerned in building up the educational standards of this profession.

We are presenting in this issue a survey of the modern field of nursing through a paper by Miss Nutting, of the Department of Nursing and Health, entitled, "The Education of the Nurse for the Home and the Community," and we shall hope to follow this by a series of papers dealing with the content of education of the various branches of nursing, experience in which we believe to be essential for the practice of the profession. We do not propose to take up in detail the theoretical courses—at least for the present. What we desire to consider is: first, in what branches of nursing should experience be provided by a hospital maintaining a school; second, what would be an ideal course in any given branch of nursing. It is our belief, and here some may take issue with us, that no nurse's professional education is complete whose course has not included theoretical and practical instruction in the nursing of medical diseases, including contagion and infection, surgical and gynecological cases, pediatrics, orthopedics, obstetrics, and mental and nervous diseases. Large as this program is, we are confident that instruction in the branches mentioned, together with the preliminary course that is generally conceded as essential, could be covered in three years, provided that the repetition of procedures be curtailed beyond the point required to insure efficiency; that the student nurse be eliminated from departments which, from a teaching standpoint, have little value, and her duties be limited to those directly bearing on her course. The question will probably, and very justly, at once arise as to how the institution can afford to provide such a comprehensive and demanding curriculum. The question is indeed important. We believe it can be answered. But the more vital question is, what preparation for her profession has the community the right to expect of a woman who holds a diploma from a school of nursing and is registered by the state as qualified for the practice of her profession?

Dr. Pritchett, in writing of medical education, has said: "Perhaps no other professional man, not even the priest, is allowed to enter so intimately into the individual and family life as the modern physician." Surely this may be quite as truly said of the modern nurse. No one could enter more intimately into the individual and family life than does the nurse, and it should be constantly emphasized that, whereas the opportunity of the physician is limited to a short space of time, the nurse's opportunity extends over twelve and even twenty-four hours.

The school of nursing and the state both assume a heavy responsibility when they place their stamp of approval on a nurse.

ANNIE W. GOODRICH.

## Education of Nurses for the Home and the Community[1]

BY M. ADELAIDE NUTTING.

A memorable ceremony took place in the city of New York one evening about five years ago when two great societies of nurses united in celebrating the fiftieth anniversary of the founding of the first training school for nurses by Florence Nightingale. Before a vast audience

[1]Read at the section of the Education of Women at the Pan-American Congress, Washington, January 3, 1916.

distinguished speakers dwelt long on the great services which Florence Nightingale had wrought for mankind, not in her immortal work in the Crimea, nor in her splendid efforts for sanitary reform in the British army and in civil hospitals, but in her creation of a new system of education, which we call modern nursing. How this system of training reformed the whole method of nursing the sick in hospitals and in homes, how it spread through the United Kingdom, crossed over into European countries, and eventually was brought over to America, are told and familiar stories.

The plans for this first famous school as worked out by Miss Nightingale are well worthy of careful study. Very interesting indeed are the ideas and principles laid down by her as to the range, character, and amount of theoretical teaching and practical training required in the preparation of nurses, and interesting also are the details dealing with the organization, methods of supervision, discipline, and matters relating to the daily life of the students. "No public school, university, or any other institution ever had so elaborate and exhaustive a system of records and markings," says Sir Edward Cooke in his charming biography, the recently published "Life of Florence Nightingale." In some ways she was so far ahead of her time that we have not even yet caught up with her. Her idea, for instance, of providing an adequate endowment for the maintenance of her school, and thus insuring it power and freedom to carry on its work, is considerably in advance of the general custom at the present day. There is, I believe, no training school for nurses in existence endowed or in any way provided with actual funds for its work, and the peculiar economic lines on which such training schools have developed constitute one of their main problems and most formidable obstacles to further growth.

Forty years have elapsed since Miss Nightingale's training system was brought over to this country and introduced into the nursing department of Bellevue Hospital in the city of New York. Within that period, slowly at first and later with swift and steady strides, a great profession has grown up. This profession has its schools, its societies, its literature, its branches and post-graduate work, and even its international relationships. Under quite extraordinary handicaps, which will be discussed later, it has developed in response to various needs of mankind until it has reached a point where almost every element in society is in some way or another leaning on this professional body of women. It would be difficult to present a correct picture of the number and kinds of institutions of modern life which have found the cooperation of trained nurses an indispensable factor in the accomplishment of their purposes. I recall at the moment the effort of a statistician recently to create a suitable symbol for the public health movement so rapidly taking shape all over the country, and he thought he had found it in portraying a nurse in full uniform, trained, skilled, and ready to do her "bit" against the invasion of the enemy. As nurses' work for public health is not nursing in the old and accepted sense of that term, this illustrates perhaps the point I am trying to make as to the widening serviceableness of the profession.

There are at the present time in this country about 1,300 training schools for nurses. All of them practically have been created by hospitals for the purpose of supplying a nursing staff, and it is therefore quite needless to mention that this is the main function of every school. The approach to education in nursing, then, has been through the door of hospital service, and the 40,000 student-nurses who are in training in 1,300 hospitals of America today constitute the nursing service of those institutions. It will be readily seen that this large number of schools, which have, as it were, been forced into existence to meet the immediate current needs of a rapidly increasing growth of hospitals of many types, would offer peculiar educational and ultimately professional problems. Specialization in medicine, which has been so marked a feature of medical progress, brought a corresponding specialization in hospitals, and there arose in many of them schools which could not in the very nature of things meet the ordinary and most fundamental requirements of professional training. The helplessness of such schools has left them open to many abuses. Admission requirements were kept low in order that a large supply of pupil nurses might be constantly available, and it is the history of hospitals generally that all work which can possibly be done by pupils is relegated to them, irrespective of its educational value, and frequently of its relation to nursing at all except in an indirect and remote sense. A trustee of a progressive hospital in a neighboring community put it tersely in saying, "So far as I can see, the training school is really a maid-of-all-work to the hospital." "One of the finest things in nursing in one way, one of the most objectionable in another," said Dr. George Dock in a recent address, "is the manner in which pupil nurses have gone on for months or years repeating a routine no longer educative." In many hospitals the quarters and living conditions for pupils were inadequate and inappropriate, and in all of them the hours of work by day and by night were painfully long. It is, when one stops to consider the situation, a truly remarkable service to society which pupil nurses have been rendering in hospitals for the past half century. They have given for the care of the sick poor more in proportion than any other body of philanthropists, and the splendid generosity and ardor with which they have thrown themselves into their task, their devotion, heroism, and loyalty, have been all too little understood or appreciated. Nowhere in any country have they been equitably dealt with, as will be easily discovered by anyone who wishes to examine the situation. During all of these years, while hospitals and training schools have been struggling with their several problems, which have been briefly indicated, there have been certain forces steadily at work making for betterment of the situation. These have been those bodies of nurses within training schools who, with courage and patience, have labored to introduce new ideas and methods; bodies of nurses outside, state and alumnæ associations, which have, with much energy, acumen, and persistence, worked to secure the legislation affecting the education of nurses which is now found in forty-four states; and, in these efforts to improve and dignify their profession, nurses have had the steady and loyal support of the best element in the medical profession.

To bring about any sort of uniformity of standards in training schools attached to hospitals of so many types, and laboring under such peculiar disabilities, has been a serious problem, and progress has naturally been slow and difficult. Under the circumstances the improvements in training school work which have taken place during the last ten or fifteen years are noteworthy. Entrance requirements are gradually becoming formulated and rising from the chaos into which they were thrown by the sudden and sweeping demands of hospital expansion. The period of training has been reconstructed, somewhat enriched, and lengthened to three years. Hours of duty have been modified, while the scheme of practical work in the hospital wards has been revised and pruned of some of its wasteful methods. Very marked improvement has

taken place in methods of instruction, and the required subjects are much more carefully and thoroughly taught than they were a few years ago. Specially trained teachers are being called for and supplied, and teaching facilities, libraries, and the ordinary equipment of schools in which serious educational work is carried on are beginning to appear. Living conditions are growing steadily better, and in a few of our cities very beautifully equipped nurses' dormitories and homes have been built up. The new dormitories at Bellevue and Kings County, New York, are examples of these. A very important advance is the increasing employment of graduate nurses in various capacities other than executive in hospitals. This is a highly rational and significant movement, reacting, on the one hand, to the benefit of the patients in providing them with a more highly skilled and stable service, and, on the other hand, through the increased staff, in lifting pressure from the pupils in training, in making possible shorter hours, suitable vacations, and a more rigid exclusion of unsuitable candidates for admission to the training school. Ultimately this method, as will be easily seen, will permit the expansion of training school work in a good many directions.

Perhaps the most important advance of all, however, in the education of nurses is that which is coming through the universities. Within the last few years schools of nursing have been established in three or four universities, and relationships less definite, but still very helpful, have been set up in several others. The schools of nursing of the universities of Minnesota, of Indiana, and of Washington University in St. Louis, Mo., are interesting evidence of the trend of thought which is gradually arising as to the way in which the education of nurses must develop in order to meet the well-defined, widespread, and rapidly growing demand for more highly qualified and liberally educated nurses. I do not mean, of course, that all training schools for nurses should seek to be gathered under the wings of universities, but that there should be some schools of nursing of this type in every state, carrying to a further and higher point than is possible elsewhere the education and training of nurses; for the work which is now required of nurses in our national life has gone far beyond anything that was even dreamed of by those who established the system of training which, notwithstanding improvements, still unchanged in its most vital aspects, prevails throughout the country today. As a system of education it is in certain aspects archaic. Florence Nightingale indeed—that woman of visions, of ideas —did see. "No system," she said, "can endure that does not march." She held up the ideal of nursing not only as a difficult, but as a progressive, art. "It requires," she said, "constant study and effort; constant progress is the law of its life."

The two original branches of nursing for which training schools prepared were private practice in the homes of the well-to-do, which has occupied for many years at least 75 percent of all graduates of training schools, and hospital work which for graduates was limited to a few high positions, administrative and executive in nature. These two have broadened out and now embrace so many and such varied lines of activity that it is almost hopeless to attempt to give an adequate idea of them. The modern public health movement, though the growth of recent years, is already worldwide. It has taken hold of the best minds of the time, and through them principles of preventive medicine are rapidly being developed into a science. These principles are being applied, it may be said, at present in two large main ways—one through the instrumentality of laws which compel, restrict, isolate, segregate, and thus enforce certain behavior on one part of the community for the protection of the rest; and the other way aims to bring the laws of health to the people, to make such laws, as it were, their common property and thus to create such an intelligent public opinion as will insure conformity to healthful habits. In whichever way these principles of preventive medicine are applied, it appears to be necessary to rely on nurses at some stage of the procedure to carry them forward and make them effective in the lives and habits of the people. There are several hundred nurses occupied in the Department of Health in the city of New York. One large group is steadily at work in families where there is tuberculosis or other contagious disease, instituting there such measure of sanitary control as are applicable to the various situations. Another large group is working to protect the health of children in the public schools, while still another group in the milk stations of the city is trying to lift a little the shadow of infant morbidity and mortality which lies so strangely across a modern civilized world. Let us turn again to Florence Nightingale. "If you would build up a healthy nation, look to your homes," she urged. It is in these homes where 90 percent of our sick poor must be nursed, must be taught, must be pulled up to a higher and safer level of life that nurses are finding one of their most immediately urgent calls for service, one which will continue for many years to come.

The health department of New York city is thus reaching beneficently through its staff of nurses into homes, schools, and other institutions, and somewhat similar efforts are being made in cities and towns all over the country. And as the work progresses, it comes about quite naturally that new things are required of the workers, a more certain knowledge of the early signs of disease, some understanding of social conditions, and ability to investigate carefully and interpret correctly the problems with which they have to deal. Ability to teach is particularly required of nurses at work in public schools, and to make personal hygiene, for instance, for the children a living and vital subject. Ability to secure cooperation, to plan and direct work in effective and intelligent ways, is essential both in the large communities where the work of a considerable number of nurses must be organized and supervised, and in small ones where the single nurse must do all that there is to be done, and act often on her own initiative, and with such wisdom and judgment as her training has provided her. In shops and factories a good many nurses are engaged in looking after the health of young girl employees, and others are seriously studying the effects on health of various conditions in industry. Hospital social service is another important field in which the predominant interest is in health problems, and here both nurses and social workers are occupied. The work appears to call for training both in nursing and in social work.

The field of public health nursing, which ministers to the many whose health is not in their own keeping, is thus seen to be richly abounding in opportunities for the best gifts which nurses can bring to its uses. They are here rendering the most fundamental of social services.

No less interesting and important is the field provided in our institutions, hospitals, training schools, and sanatoriums. Hospitals, no matter where they are, whether in city or small town, whether general or special, are, or should be, factors of very great importance in the life of their communities. They are, of course, places where an assured degree of medical and surgical and nursing skill can be promptly and efficiently applied and maintained, but they are more than that. They are centers of a peculiarly

vital social interest, where the common good-will of the community for the sick and suffering should find its most perfect expression; they are centers also whence the best knowledge of hygiene and wholesome living should constantly radiate. Many of them, especially the larger ones, are definitely committed to organized educational work in their relation to medical schools and training schools, and others to investigation and research in special forms of disease. They are all laboratories, in a sense, frequently vast and complicated, where mankind is working out one of its experiments. To the direction and development of almost all of the smaller hospitals nurses are called for obvious economic reasons, and they should bring to such tasks far more than managerial ability or technical skill, essential as these are. The smallest of these positions is never small in one sense of the word. Into the larger hospitals the question of education enters more definitely and closely. The heads of our great training schools for nurses are, as principals, called on to exercise functions no whit less important, difficult, and complicated than those usually exercised by, let us say, the deans of colleges for women. They must be, as superintendents of nursing, specially trained administrators because of the technical problems entering into their work and of the highly organized body of workers over which they have control. They must, as principals of training schools, be educators, or they have no business at the heads of schools of any kind, since that work calls for experts. As educators they should be familiar, not only with the immediate round of affairs within their own enclosures, but also with the general progress of hospital and training school work. They are also required to study closely the various fields other than nursing into which nurses are entering, in order that their schools may appropriately enlarge or modify their schemes of instruction and training. It is incumbent on women holding these positions that they should have some weight and influence in the educational as well as in the hospital world, since their relation to education is indisputable. In all training schools there is a staff, large or small, in accordance with the need, of assistants, supervisors, and instructors, who are or should be not only highly skilled and carefully trained nurses, but women of more than common capacity in their several ways, and of such ideals and potentialities that the higher posts of various kinds in the whole field of nursing may be constantly filled from their ranks. For the handling of the practical administrative problems of institutions there is no training in the world comparable to that which a nurse receives on her journey upward through the various grades and ranks in the official staff of the hospital training school; but there is a possibility that it may develop into too long a journey. The position of instructor in training schools is worthy of special mention, since it is of comparatively recent creation and marks the newer emphasis laid on sound teaching. These instructors are first graduate nurses, but they are further prepared on the usual pedagogical lines by study of psychology, of principles and methods of teaching, and by additional work in the sciences. Since nursing methods are based on science, they must of course be affected by advances in scientific research, and it is highly important that teachers and trainers of nurses should be capable of applying new scientific knowledge and principles thoroughly, minutely, and correctly to nursing procedures.

There are several interesting fields open to nurses in institutions outside of hospitals, and among them is that occupied by the resident college nurse. Her province is not rigidly defined as yet and varies in different colleges, but in the main she watches over young students, detects ailments in their early stages, encourages hygienic habits, and sometimes gives instruction in personal hygiene. A good many college women are turning to this work, which is carried on in a ground familiar to them.

Private nursing is still the branch of work which occupies the larger proportion of all graduate nurses. The number so employed seems to be slightly diminishing, owing partly to a wider use of hospitals among the well-to-do, and to the opening up of new fields, such as those described in public health work. There is some tendency toward specialization in private nursing, and nurses specially interested and with additional training in the care of children, in nervous and mental cases, in obstetrics, are asked for. Both in private and in all forms of public health work there is a demand for nurses who have command of at least one other language than English. Italian, German, Spanish, or some of the Slavic tongues are an invaluable addition to a nurse's armamentarium. A nurse who could speak Chinese was able a few years ago to do particularly useful work for the Board of Health in New York city, and valuable opportunities for work are frequently lost because of the difficulty in securing enough nurses who have command of languages.

It is true that people of moderate means are nowhere adequately provided for in time of sickness, but our best economists have not yet succeeded in showing us how nurses can offer any generally acceptable solution to this problem. It is an economic and not a nursing problem. The best way that suggests itself for the handling of a problem of such dimensions is through some form of insurance which will provide skilled nursing. Nurses unable to give their whole time have devised a useful system of hourly nursing, which provides skilled care for certain kinds of cases, and hospitals and sanatoriums are of course increasingly used by all classes.

Thus is spread before us in outline the wide and inviting field of activities for women which is open to those who successfully complete the course of study and training required in a modern school of nursing. From almost any standpoint such training appears to be of very great advantage to any young woman who is fitted by education and physical and personal qualities to make proper use of it. Actual requirements for admission have always been modest, and will probably never go beyond high school graduation, though there is a growing element of college women turning to this valuable field of public service, and the older schools of wide repute report a steady increase in the number of college graduates applying. The value of this training in nursing is unique and twofold, and lies, first, in the fact that it prepares not only for many definite, important, and fairly remunerative kinds of work in nursing on which the student may enter immediately after graduation, but that it also provides a peculiarly strong foundation for many other occupations in allied fields of social and public importance; and the second fact is that this training can be obtained at a minimum of expense to the student. It is really a wonderful thing to be able to obtain a valuable education, and in the very act of doing so to be performing services necessary to society and of distinct economic value. These services which are required of student-nurses in training are up to a certain point absolutely essential, and are such as would be required in a rational scheme of training in any art, such, let us say, as painting, sculpture, music, in which a fine and elaborate technic is involved and a high degree of skill must be acquired. The fact that the services the student-nurse performs are required by the hospital and needed by the patient, and therefore must be done according to certain standards, enhances in a sense their value education-

ally. It supplies a definite and powerful motive, and calls forth the student's best efforts; the whole educational problem becomes real, the work is permeated with a rich human interest, and this is what makes nurses look back on their period of training as having afforded them about the most wonderful and illuminating experiences of their entire lives—this it is which gives them their unique strength. Under proper safeguards and adjustments there does not seem to be any reason why this principle should not be extended into other branches of education, vocational and professional. Certainly our great schools of nursing afford to many of us not only an inspiring, but an ever suggestive, sight. The value of such great opportunities to student-nurses is, of course, dependent in a large measure on the mental grasp and mental training which they bring. What goes on in hospital wards is unintelligible in many of its most important aspects to those who have not first worked their way through the chemical and biological laboratories. "I imagine," says Dr. George Dock in discussing the essentials of professional education, "that to the uninstructed mind the taking and charting of temperatures is almost as monotonous as sewing buttonholes at so much a hundred. To the initiated it should be each time as interesting as the unfolding of a rose." How to draw into training schools for nurses more students who are capable of becoming thus "initiated," who can bring some such attitude toward their work, is the great problem which now directly and rather imperatively confronts these schools; for if they are to meet in any adequate way the present insistent demand for soundly educated and highly qualified nurses in the various fields which have been described, then it is clear that they must be able to attract a very much larger body of students answering to this description than they have hitherto been able to do.

Thus at every step forward in the development of any of the branches of professional nursing we are thrown back on the training school for nurses, and progress is conditioned by its standards, methods, and ideals. It is literally true that certain kinds of work requiring nurses, particularly in the public health field, are sometimes at a standstill because it is impossible to find enough properly educated and specially trained nurses to grapple with the problems which are presented. On the other hand, there is some evidence to show that the supply of nurses, especially for private service, is in some places somewhat in excess of the demand. This appears to be true at least of certain large centers in which private nurses appear no longer to find the steady occupation which was formerly assured them. It would seem as though training schools are not altogether accurately measuring their problem. Notwithstanding the improvements of recent years, there is much to be done to enable them to rise to the full height of their educational opportunity. They may well look with a considerable degree of satisfaction on their past achievements. The reforms they have wrought in hospitals are a matter of history; they have so transformed hospitals, in fact, that from places dreaded by the sick poor they have become the resorts of the sick rich. Training schools have sent forth an army of capable, skilled, and devoted women who are ministering to the sick in the homes of rich and poor alike, and there are about 100,000 graduate nurses steadily so occupied. But training schools for nurses are now called on to send forth nurses in impressive numbers to new and important fields of work, for which the training offered in any hospital can only partially prepare. The great services which training schools have so far rendered to society have been carried on without any of that kind of financial help which is so freely given for the support and development of almost every other kind of educational work. Is it not time for the public, which has so strangely overlooked this branch of women's education, to begin to study its responsibilities toward it? Training schools for nurses are clearly fulfilling a very important place in our national life, and ministering well to many of its urgent needs in both home and community. They must be helped to higher levels of usefulness. Hospitals, struggling with their own intense and engrossing activities and with tremendous administrative and financial problems, must not be left to carry forward unaided educational work of such obviously vital interest to the entire community. Hospital resources and facilities are not anywhere ample enough to enable them to maintain adequately the training schools which are a part of their system. The future of such schools depends on their being placed on a sounder economic basis.

### Standardization of Training Schools for Nurses

The State Board of Registration for Nurses of Pennsylvania has decided to appoint an educational director, whose duty it shall be to inspect the training schools throughout the state with reference to the curriculum, housing conditions, and efficiency of the school in general. The creation of this position marks the beginning of a new era in the administration of the state registration act, and, if a properly trained person is selected for this responsible position, Pennsylvania training schools will have placed themselves in the foremost rank in the country.

It is generally well known that, while certain hospitals publish a most elaborate schedule of didactic and practical classes for their student nurses, many of them do not adhere to the schedule, and permit the practical work to interfere with classes whenever it suits the convenience of the institution. Heretofore little, if any, attention has been given in many schools to the proper housing conditions for student nurses, any accommodations being considered adequate, and, as a direct result of this lack of foresight, many young women of refined tastes have been lost to the nursing profession. The time has come when hospitals that desire the services of student nurses will have to assume a heavy obligation to the student. They are conducting an educational institution for the training of high-grade women, and while, to impart this training, practical ward work is essential, the theoretical work is of equal importance and a necessary preliminary to the performance of efficient nursing. The education of nurses should not be dependent on the whims or personal convenience of visiting physicians or other attaches of a hospital. Every school worthy of recognition by the state board should be required to employ a staff, however small, of paid teachers, whose services are quite as necessary in supervising the practical bedside work as they are in lecturing.

The Van Leuven Browne Hospital School for Crippled Children, Detroit, Mich., is conducting a campaign by which it hopes to raise $200,000 for new buildings. The trustees of the institution plan to purchase a forty-acre tract of land in one of the suburbs of Detroit and erect on it a group of twelve buildings. Eight of the structures will be cottages for the housing of the children. There will be two school buildings, one a regular graded school and the other an industrial school, where the children will be taught self-supporting trades. The colony will have its own hospital, also a building for administrative purposes. The present hospital school was established eight years ago by Miss Blanche Van Leuven Browne, herself a cripple. It has enjoyed steady growth, and the present quarters are inadequate for the number of children applying for admission.

# THE MODERN SANATORIUM

Conducted by ALBERT WARREN FERRIS, A.M., M.D.,
*Superintending Director for the Commissioners of the State Reservation, Saratoga Springs, New York.*

Please address items of news and inquiries regarding The Modern Sanatorium to the editor of this department, Saratoga Springs, New York.

## First Impressions

It was Crombie who said: "The most important parts of a sentence are the beginning and the end; by the former our attention is excited, on the latter it dwells." The idea may be applied to a sanatorium very closely, for the impressions on arrival and at departure are of prime importance. But, no matter how satisfied with the results a patient may be on departing, the first impression on approaching the establishment may be encouraging or absolutely disheartening. If disheartening, an unfortunate psychic condition starts, which must be met before much can be done for him.

The average patient approaches in an unhappy frame of mind. Disappointed, discouraged, perhaps dejected, because of his illness; weary, not hopeful, perhaps irritable; he is very sensitive to early influences. Anything repellant, annoying or gloomy apprehended in the first glance on approaching the buildings forms a deep impression, which is frequently reproduced and is hard to replace or obliterate. *Pari passu*, artistic, harmonious, cheerful accessories at once attract, disarm, and captivate. Beauty of form or of color makes a strong appeal, and here the landscape gardener and the architect lend their valuable assistance. Many people have such ill-developed powers of observation that they do not easily notice pleasurable or distasteful details, but nevertheless they are affected by them. And when writing home, as they look about them for topics on which to construct the scanty paragraphs of their early letters, they analyze for the first time their surroundings, and scrutinize the different features of interest in environment and accessories.

To forestall the feeling that prompts to adverse remark or criticism, and to provide satisfying visible conditions, one must secure the results of thrift, of neatness, and of artistic treatment in the immediate surroundings, not only at the threshold, but also at the gates.

How should the boundaries be marked? Better than even an ornamental wrought iron fence, or one of flat palings of tasteful scroll-saw pattern, is a hedge of spruce or of privet, as the climate dictates. The hedge may be behind a low stone wall, or it may be reinforced by an invisible low fence within. Either hedge or fence must be kept in absolute repair. Once within the gates, the vehicle must bowl the patient up to the door over a well-drained sand, gravel, macadam, or asphalt roadway, curved and rambling if the grounds are extensive enough to make this treatment possible, passing beds of bloom, dwarf shrubs, tall and graceful trees, groups of flowering bushes, and perhaps a great boulder or two, or an outcrop of natural rock.

Winter offers us not many chances beyond evergreens, although the beech is loath to part with its dry, bright brown, dead leaves, and the white oak tenaciously retains last season's rustling dead foliage until the new swelling leafbuds of spring eject it summarily. Few of us love the thickets of bare tree branches sturdily springing from the larger limbs. Few of us can name the trees native to our own locality from an examination of their winter outline and the color and texture of their bark; to those of us who can, our delight in the woods is less, not lost, during the period that Boreas and Hiems call their own.

From early spring to late autumn, opportunity for planting presents itself repeatedly. Foliage beds, blooming plants, and flowering shrubs are available to provide a continuous show of color. Slim and graceful trees, stocky masses of well-pruned shrubs, odd-shaped Japanese dwarfs, placed about the walks and drives, with due mindfulness of "the deformity of uniformity," may well combine to please the eye and occupy the mind, as one passes through the grounds, from gateway to entrance. Some new planting is necessary from time to time; in fact, the planting for the earliest spring blooming must be done in the November previous. The bulb bed must then be prepared, if we would have the snowdrop and the crocus to delight our eyes, before the last of the snow has melted. Yet the task is not so great; for most of the plants and trees that provide a succession of bloom are permanent when once placed, and require only a little care and fertilizer from time to time. Following the crocus come in order the black hellebore (*Helleborus niger*); the Judas tree (*Cercis*), with its sterile deep-pink flowers, blowing before its leaves appear; the brilliant yellow forsythia, lavish bloomer; the wax-white shad bush (*Amelanchie Canadensis*); the deep-red *Pyrus Japonica*, or flowering quince, whose sturdy, healthy green leaves are a delight; and next the graceful spirea, white or pink, and you can take your pick of thirty varieties, including the sort called bridal wreath, that provides masses of clustered white bloom. Following closely come the deutzia, the almond, the flowering cherry, weigelia; Japanese barberry; India currant (*Symplocarpus racemosus*); desmodium, pink and turning to purple; Philadelphus (commonly called "syringa"); and lilac (the botanists' syringa). Hardy roses, of course, begin to bloom early in June. Perhaps the last effective blossom of the hardy perennials is the graceful climbing clematis. To name the flowering annuals would be to quote a catalogue. But we must bear in mind the native white birch, considering trees, so artistic in groups or even in little aggregations of three or four specimens; the South Carolina poplar, sturdy, clear green foliaged, so thirsty as to thrust its rootlets even into the crevices between the lengths of water or drain pipes, and often used as a quick grower and a graceful figure, to be sacrificed when more desirable permanent trees have more leisurely matured; and the Lombardy poplars, stately sentinels so effective as guardians of the gateway or to mark the corners of the estate. We have omitted the double-flowering crab apple, the hawthorn, the *Catalpa speciosa*, the pink acacia, the althea, the laburnum (*Cytisus laburnum*), sometimes called "golden chain." We have also slighted the mulberry, and the earliest of all flowering trees, in some localities, the horse-chestnut, with delicate yet stiff flowers resembling Italian glass work. A favorite tree is the *Catalpa bungii*, which, though flowerless, is often pollarded and thus encouraged to spread its short, stocky branches symmetrically, and provide grateful shade. The fruit trees begin their succession of bloom in April, and can anything surpass the dainty blossoms of the cherry

(the joy of the Japanese); of the pear, often transforming the tree into a massive white bouquet; and the exquisite apple, as sure as "the merry month of May" itself?

Skillful combinations of an intelligent selection of trees, vines, and shrubs will afford an overlapping succession of flowers and "a joy forever." But if "forever" means anything, no one must be allowed to pick branches from shrub or tree. Twisting off the twigs limits the bloom of following years and deforms the plant. How many thoughtless enthusiasts have crippled forever the trees that presented masses of color, simply to enjoy a bright maple branch or two for a few days, perched over the mantel or mirror! Possession is not necessary for enjoyment. If we would be advocates of the greatest good to the greatest number, let us be mindful of the words of Emerson:

"Hast thou named all the birds without a gun,
Loved the wild rose and left it on its stalk?"

The bank of the woodland stream will provide us our pussy-willows with the first appearance of nature's green, and the distant orchard or meadow will provide material we can gather without committing vandalism.

Often the preservation of a wild feature will afford a most picturesque object. Such is the old grapevine near the entrance from the north into the grounds of The Glen Springs, at Watkins, N. Y. This vine, luxuriantly spreading for decades, climbing, surrounding, and surmounting a cedar tree, finally arches completely over the sidewalk, like an old-time fortified gateway into an ancient city, and forms an inviting shelter for the liquid-noted evening thrush and numberless perches for the lithe catbird, whence he may emit his energetic miscellany of vocal gymnastics.

Battle Creek Sanitarium, Battle Creek, Mich.

The Glen Springs, Watkins, N. Y.

The architect contributes much to the special details and the general results. The impressions his work makes on the newcomer are more appreciated by the great majority, and form more lasting food for thought in the average mind than do the details of lawn or arboretum. The architect should furnish such effects, suitable to the objects and character of the buildings, as will more than meet reasonable expectations, and he who plans and builds must impart some inspiration to the architect.

Shall you ever forget the exterior of Bill Nye's cabin, in North "Elby," near the margin of Mud Pond, in the Adirondacks of New York state? A little, one-story log and clapboard structure, with four rooms and four windows; without, a hooded shelf on which stood a couple of tin pans, a frying pan, and a couple of inverted kettles; with an ax, a pack basket, a pair of oars, and a paddle, as well as a fishing rod close by; within, a kitchen, with wood stove, a cupboard containing a little canned beef, bacon, flour, coffee, maple sugar, baking powder, and salt. What more would you? Here were fuel and materials for a banquet of beef, flapjacks, and coffee. Yet there was more to the prospect. There were bed rooms with real beds, luxurious, if simple, to the eyes of us who had slept in our clothes on balsam boughs for

The Homestead, Hot Springs, West Virginia.

many nights. Bill was away, you will recall, but his hospitality did not fail us. We would have voted his viands fit for a gourmet, and the architecture of his dwelling equal to that of a chateau, had a ballot been taken. But that was in the August days of '80, when our breath was never short, and our muscles never weary; when the food and the architecture were but the prelude to a scramble up Bear Mountain, to catch the sunset glow on higher peaks; a glorious view from the top of Mt. MacIntyre after swinging over five miles of easy climbing next day; and the tramp over to the grave of old John Brown of Ossawatomie, and on to Lake Placid. The humble means to a glorious achievement are scarcely noticeable. The lower rounds of the ladder are unseen and forgotten if our vision reaches the light beyond the top. But if we see no light, if our strength is only sufficient for the lowest rounds, and we gravely question if we can climb at all, we need a white enameled round or two, preferably with tasteful gold patterns and an inviting seat, to help us forget that our limitations may be of considerable duration.

And so, as we approach the sanatorium, where we shall dwell for a season while waging a fight against the agencies of disease, if our first definite glimpse is of a pleasing architectural feature, we are reassured and take our first steps sympathetically. The end of the main building of Battle Creek Sanitarium we find inviting, with the balcony hung high under the edges of the capitals of the Greek columns. Still more impressive is the porte-cochére of The Homestead, at Hot Springs, West Virginia, with its dignified row of Ionic columns, at once imposing and beautiful.

Even a mullioned kitchen chimney may testify to refinement, though emitting carbon monoxid. Let us build reposefully and with regard to use, but never inartistically. A strictly utilitarian theory, even of morals, is untenable.

ALBERT WARREN FERRIS.

### Philadelphia Hospital Association Organized

A long-felt want was met when, on the invitation of Mr. Daniel Test, superintendent of the Pennsylvania Hospital, a meeting of all the hospital superintendents of Philadelphia and vicinity was called to meet at the Pennsylvania Hospital for the purpose of discussing the new workmen's compensation act and other subjects of mutual interest. The meeting was well attended, and brought forth such a fund of subjects vitally interesting to all present that a permanent organization was formed, Mr. Test being elected president and Dr. W. H. Walsh, secretary. At a subsequent meeting the necessary preliminaries for the proper organization of a permanent body were arranged, a schedule of prices to be charged compensation cases was adopted and recommended to all the hospitals in the city, and various committees were formed to consider and report on certain questions before the association. The new association pledges its support to the American Hospital Association, and well cooperate with the local committees on arrangements for the next convention to be held in Philadelphia during the latter part of September.

Governor Whitman, of New York, recently announced his intention of asking the Legislature for an appropriation to erect on the grounds of the state hospital at Middletown a hospital where aged and feeble patients can be sent. Most of such patients, the governor said, were suffering from senile dementia, and to care for them in a separate institutions would greatly decrease the cost to the state.

# SOCIAL HYGIENE
## VENEREAL DISEASES

Conducted by WILLIAM F. SNOW, M. D.,
*General Secretary, The American Social Hygiene Association.*

Please address items of news and inquiries regarding Social Hygiene to the editor of this department, 105 West Fortieth street, New York City.

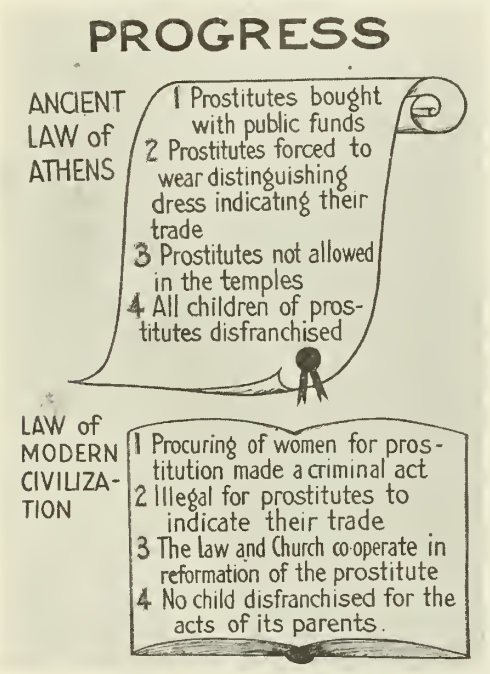
### Progress, 1900-1915

The phrase "social hygiene" has had an interesting and varied history, and will, I venture to predict, develop other and larger meanings before it finds its permanent usage in the public's vocabulary. Social hygiene owes its present usage largely to our newspaper editors who felt the necessity for some descriptive term covering the diverse activities directed toward the reduction of venereal diseases and the repression of prostitution. Apparently the phrase originated in Chicago through its adoption in 1907 by the Chicago Society for Social Hygiene, although this organization was at the time devoting its energies primarily to sex education.

During the period 1905-1910 a number of state and local societies, special committees of women's clubs, church and medical associations, and other organizations were developing the pioneer work of focusing public attention on the need for organized effort in the social hygiene field. One group of these societies was mainly concerned with the medical and sex education aspects of the problem. In 1910 a meeting held in St. Louis for the purpose of organizing a national society endeavored to select a name from such titles of local societies as "Sanitary and Moral Prophylaxis," "The Study and Prevention of Syphilis and Gonorrhœa," "Social and Moral Prophylaxis," "Social and Moral Hygiene." The name agreed on for the time being was the American Federation for Sex Hygiene. A second group of societies and committees devoted their attention during this period to the problems of prostitution and other forms of sexual vice. These organizations likewise utilized many titles and effected many combinations and affiliations, which finally centered in the American Purity Alliance, whose activities were broadened in 1912 and the name changed to the American Vigilance Association. There has always existed a third group interested primarily in measures for the protection of the family and the development of moral character. The National League for the Protection of the Family, in its history of development during the past twenty-five years, illustrates the efforts to establish a special society devoted to this field of endeavor. Through the consolidation of the American Federation for Sex Hygiene and the American Vigilance Association the present American Social Hygiene Association came into existence in 1914.

The progress of the social hygiene movement began in the closing years of the nineteenth century, but, as this is only another way of saying fifteen years, the story does not take long to summarize. Prior to 1900 scientific and sociologic data were being recorded. With increasing frequency papers or addresses appeared on the programs of

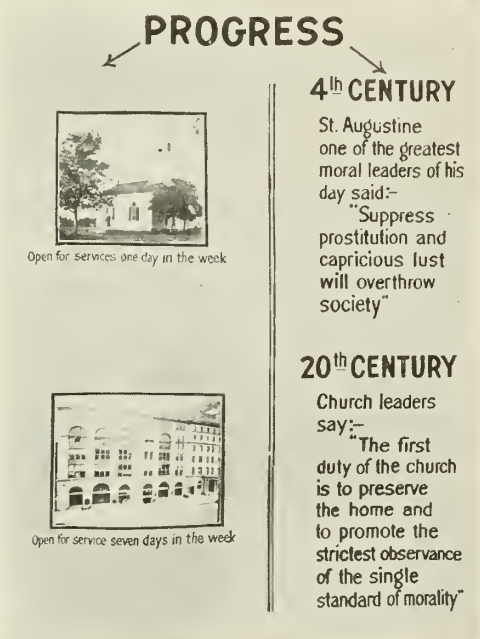
various organizations calling attention to medical, economic, and moral phases of the problem. The Brussels conferences of 1902 and 1904 greatly influenced the final decisions to inaugurate educational propaganda in many countries. In part, we owe Dr. Prince A. Morrow's invaluable pioneer work to these conferences, which he attended as delegate from the United States. From 1900 to 1910 the available data were being formulated for the educational campaigns already mentioned as having begun in local experiments and discussions by small groups of interested citizens. During this period new facts of the highest importance were discovered. In the medical field there were added new observations of gonorrhea and its ravages, the discovery of the organism of syphilis in


PROGRESS
ANCIENT LAW of ATHENS
1 Prostitutes bought with public funds
2 Prostitutes forced to wear distinguishing dress indicating their trade
3 Prostitutes not allowed in the temples
4 All children of prostitutes disfranchised
LAW of MODERN CIVILIZATION
1 Procuring of women for prostitution made a criminal act
2 Illegal for prostitutes to indicate their trade
3 The law and Church co-operate in reformation of the prostitute
4 No child disfranchised for the acts of its parents.

1905, the development of the Wassermann reaction in 1907, the preparation of salvarsan for the treatment of syphilis in 1910, and in 1911 the successful inoculation of syphilis and cultivation of its organism, crowning the faithful and brilliant research of many investigators over almost a decade. These advances made possible by 1912 a practical campaign against venereal diseases as soon as public opinion could be developed in support of it. In the law and law-enforcement field the records show many persistent and self-sacrificing efforts to utilize existing statutes and to devise new legislative and administrative measures. Typical of these have been the federal "white slave" enactments, the state injunction and abatement laws, the "tin plate" ordinance, and municipal regulations directed toward the elimination of commercialized prostitution. Good environment and observance of moral standards have become recognized as vitally important forces in any campaign for ultimate eradication of venereal diseases and prostitution as great social ills. Something has been done by social hygiene societies toward applying these forces, and a great deal has been done in this direction by other organizations. One has only to think back five years to realize how much has been accomplished in the creation of public opinion in support of medical, legal, social, and moral lines of attack on the social hygiene problem.

Social hygiene has become recognized as an inclusive phrase covering activities of which the campaigns against venereal diseases and prostitution are only a part, but up to the present time these activities have necessarily been brought most prominently before the public. Recently the idea is gaining ground that social hygiene is essentially a constructive movement for the promotion of all those conditions of living, environment, and personal conduct which will best protect the family as an institution and secure a rational sex life for the individuals of each generation. This changing viewpoint is well illustrated by the forceful statement of Dr. Edward L. Keyes, Jr., descriptive of the aims and methods of social hygiene societies today:

"The elimination of disease and prostitution cannot be attained solely by the enforced registration of venereal diseases, the raiding of disorderly houses, and the enactment of laws against procuration and solicitation. Such police and legislative activity achieves temporary or local ends. But reform of this sort rapidly burns itself out and the police remain singularly human in their weaknesses. The real strength of the social hygiene movement of today lies in the cooperative activities of the great religious, social, and educational organizations. They are striking the evil at its source; not by driving the prostitute into the street and then out of it again, but by preventing our young girls from becoming prostitutes and our young men from preying on them. This they hope to achieve by informing the mind so as to banish prurient curiosity, by diverting the imagination to emotions joyous and clean, by exercising the body in playgrounds and dance halls that are safe, and, above all, by inspiring the soul with

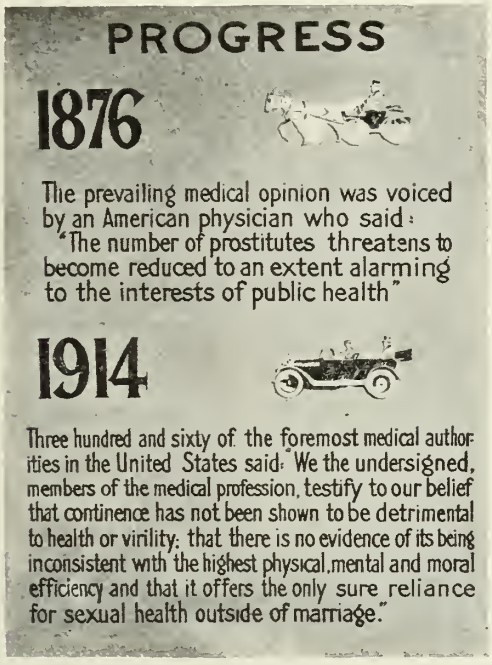

PROGRESS
4th CENTURY
St. Augustine one of the greatest moral leaders of his day said:-
"Suppress prostitution and capricious lust will overthrow society"
Open for services one day in the week
20th CENTURY
Church leaders say:-
"The first duty of the church is to preserve the home and to promote the strictest observance of the single standard of morality"
Open for service seven days in the week

the highest religious and family and civic ideals. To turn lust into love, 'into the enthralling love of mate for equal mate, into civic love for freedom, home, and state, into the eternal love of God and of all things create'—such is our aspiration."

Eventually it is possible that social hygiene may find its place as an inclusive designation for a group of organized and affiliated movements which deal with community problems in which social and moral factors, as distinct from sanitary factors, are of primary importance. In this sense it is logically a companion term to public hygiene, or public health, which is its popular equivalent.

Returning to the consideration of the major activities of social hygiene as it is at present defined, an encouraging prospect is presented. As the period from 1905 to 1910 was one of industrious tabulation of scientific and social data and pioneer experiments in organization, and the period from 1910 to 1915 has been one of persistent education and formation of public opinion, so the period from 1915 to 1920 promises to be one of active administrative effort to achieve results which have been demonstrated to be attainable. In the medical field a fairly definite program has been launched.

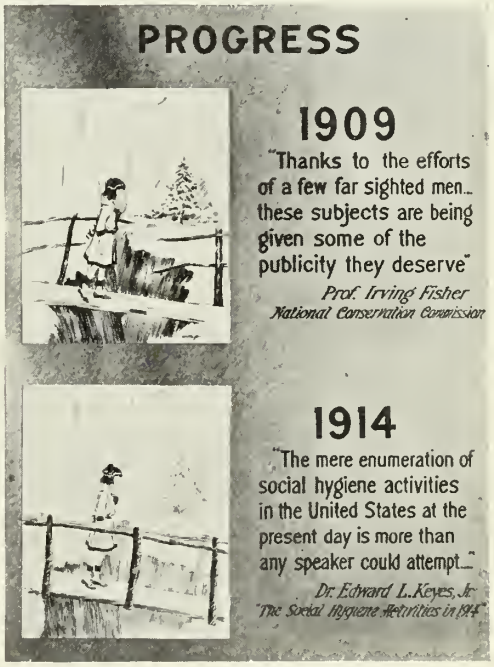
In attacking any disease from which he is attempting to protect the public, the health officer first secures through investigations, physicians' reports, and personal


PROGRESS
1876
The prevailing medical opinion was voiced by an American physician who said:
"The number of prostitutes threatens to become reduced to an extent alarming to the interests of public health"
1914
Three hundred and sixty of the foremost medical authorities in the United States said: "We the undersigned, members of the medical profession, testify to our belief that continence has not been shown to be detrimental to health or virility; that there is no evidence of its being inconsistent with the highest physical, mental and moral efficiency and that it offers the only sure reliance for sexual health outside of marriage."

interviews all the information obtainable on existing cases, and arranges for their treatment and supervision under conditions which will preclude transmission of the disease to others. He then proceeds to carry out such additional measures as are calculated to protect the noninfected portion of the population from any cases he has not discovered. Looking toward the future, he finally endeavors to secure those community conditions and standards of personal hygiene and conduct which will prevent the recurrence of the disease after it has once been eradicated. Analyzing on this basis the evidences of progress in reducing the prevalence of venereal diseases, we find now in many parts of the United States diagnostic facilities, advisory stations, dispensary services, and, to a limited extent, hospital care, provided in an endeavor to benefit the infected and to teach them how to protect the public during the continuance of their disease. The extension of hospital social service to this class of cases is steadily being demonstrated to be wise and practicable, and progress is being made in getting venereal diseases reported.

The instruction of the public in measures for protection of noninfected individuals has also progressed. Obviously, continence outside of marriage for both men and women is the greatest factor in the prophylaxis of these diseases, and the acceptance of this standard has been steadily urged by the social hygiene societies, a few health officers, and those moral agencies which have been induced actively to participate in the campaign. The other factor in personal prophylaxis—i. e., medical prophylactic measures—is still on the firing line and illustrates the great difficulties which have attended all progress in the past five years. That society is not opposed to the popularization of methods of preventing the spread of diseases by means of medical applications, or even to the furnishing at public expense and compelling the use of medical prophylactics, is amply demonstrated by numerous instances, as witness the requirement of vaccination against smallpox, the distribution at public expense of diphtheria antitoxin, and, in earlier days before the nature of communicable diseases was understood, the wearing of a piece of asafetida about one's neck, or the placing of saucers of carbolic acid about the house. The opposition to medical prophylactic measures in venereal diseases is based primarily upon the public's determination to safeguard something it holds far more precious than health—namely, the morals of the community. The approval accorded the use of silver nitrate solutions in preventing gonococcus infections of new-born babies' eyes is still better evidence of this. Before medical prophylactics can be wisely utilized, their bearing on the moral problems must be worked out and well-considered plans adopted.

The attack on community conditions indirectly influencing the prevalence of venereal diseases or favoring their return to a community, could they be once eradicated, is viewed by the health official largely as an academic question. These diseases, like tuberculosis, are endemic and his executive responsibility leads him naturally to interest himself primarily in the existing cases and those individuals in immediate contact with them.


PROGRESS
1909
"Thanks to the efforts of a few far sighted men... these subjects are being given some of the publicity they deserve"
Prof. Irving Fisher
National Conservation Commission
1914
"The mere enumeration of social hygiene activities in the United States at the present day is more than any speaker could attempt..."
Dr. Edward L. Keyes, Jr.
"The Social Hygiene Activities in 1914"

The evidence seems clearly to indicate that the public will soon assume the same attitude toward venereal infections that it does toward other dangerous communicable diseases. This attitude, as expressed in tuberculosis or typhoid fever, for example, is one of sympathy and assistance for the infected individual, while a frank and searching inquiry is made into the source of the infection and the conditions of the community which may have contributed to the opportunity for his infection. It is true of American communities today that public opinion demands the reporting of typhoid fever cases, with ample

explanations of high or low rates. Perhaps the time will come when the concealment of syphilis and gonorrhea cases will be followed by a suspicion that the opportunities for spread of these diseases are unusually large, and that the community thus failing to record frankly its morbidity rate for these diseases is not a safe place in which to establish a home. Every health officer knows the power of such an argument in securing funds and support for the battle against such diseases as typhoid fever, malaria, and even tuberculosis. Social hygiene societies are endeavoring to turn this power to account in the battle against the venereal diseases.

So much for progress in the medical field; in the law and law-enforcement field the endeavor to repress prostitution and to establish activities which may ultimately be expected to eliminate at least its commercialized aspects has made notable advances. The battle for the abandonment of segregation or other forms of regulation of prostitution as a public policy has been won. New Orleans and San Francisco are the only two large cities in the United States where publicly acknowledged red light districts are maintained. The agitation aroused in the Louisiana Legislature last winter over an abatement and injunction bill and the persistent fight for better conditions in California that has been maintained against the greatest conceivable opposition of the vice interests are indications that these remaining strongholds of the segregation policy will ultimately give way.

Certain important cities secretly tolerate centers of prostitution, and occasionally efforts are made to bring about a return to a policy of recognized segregation, but the results of the vice investigations in this country and the Flexner report on conditions in Europe have crystallized public opinion in favor of the abolition of commercialized prostitution. The creation of such effective organizations as the Committee of Fourteen in New York and the Committee of Fifteen in Chicago may be taken as evidence of determination to go steadily forward toward its ultimate eradication. The activity of other agencies, including the several departments and bureaus of the federal government empowered to deal with special phases of the problem, is further evidence of progress in this direction.

Looking toward the prevention of its return, once open prostitution has been driven out of a community or measurably reduced, various laws and administrative measures have been developed. In the main these provide: (1) ready means for an individual or small group of citizens to set in motion existing law-enforcement machinery, as illustrated by the various abatement and injunction laws; (2) public facilities for proper investigation of individual cases leading to official action in the best interests of both the public and individuals, as illustrated by the creation of morals commissions or morals courts; (3) provision of adequate institutions for the treatment, discipline, and segregation of delinquents, as illustrated by the increasing cooperation between officers and agents of the law, directors of psychiatric and medical clinics, probation and protective associations, and homes for the feebleminded. The personal factor in moral prophylaxis, like that in medical prophylaxis, is in a state of uncertain development. Progress is being made by social hygiene societies and by other agencies in building up better environmental conditions, and slowly the public is coming to realize the important bearing of such factors as alcoholism, feeblemindedness, lack of self-control, toleration of extramarital alliances, illegitimacy, desertion, and divorce on social hygiene problems. Efforts are also being made to correlate the existing laws and ordinances and to standardize procedure in the several states.

The study of all the notable advances in social hygiene show certain common principles of procedure. First, there have been comprehensive and thorough investigations of each phase of the problem. On the basis of evidence thus secured, plans for dealing with the situation have been worked out, the public has been informed of the facts, and one or more practical demonstrations of the proposed measures have been arranged. These steps have been followed by the launching of a careful campaign to develop public opinion in support of general application of the demonstrated measures. Attempted short-cuts in this procedure have usually proved disastrous or delayed permanent gains. The movement cannot afford to be unduly forced by impatient enthusiasts or retarded by the overcautious. It must lead public opinion in its field, but the administrative measures advocated cannot hope for success in advance of a general belief in their efficacy and the public's determination to have them enforced. The old adage, "well begun is half done," has often proved true. Whether it is given to this generation to accomplish so much for the social hygiene movement, time will show. The future seems full of promise.

### A Portable Hospital

Through the generosity of a New York woman the French Red Cross will soon be in possession of a portable hospital of such unique construction that it can be erected or dismantled almost instantly, and can be easily transported to the part of the field where it is needed. The donor of the hospital is Mrs. Oscar L. Richard, wife of the president of the State Bank in Grand street. When the idea of the gift of a knockdown hospital occurred to her as a suitable gift to the Red Cross, Mrs. Richard consulted the firm that has built a large number of portable houses for the United States government for use in the Panama Canal Zone and Alaska. The plans were drawn under her supervision. The cost of the building was $5,000. The novel feature of its construction is the plan of having the sections of the floor from the packing crates in which it is transported, the sections of the roof making the covers. Handles on the sides of the crates make it easily carried by hand. The hospital is 45 x 18 feet and will accommodate 26 patients. Two men can erect it in ninety minutes. Not a nail or a screw is used, bolts being the only method of joining. The building will be comfortable in the most severe weather.

### Reciprocity Registration in Pennsylvania

In connection with the attempts that are being made to improve the nursing situation in Pennsylvania, it is interesting to record a recent decision or opinion of the attorney general to the effect that the State Board of Registration for Nurses is empowered to register graduated nurses who are registered in other states without further examination, and may refuse to examine or register nongraduates, even though registered in other states.

The Baptist Memorial Hospital, Memphis, Tenn., is making preparations for the erection of the second of three buildings originally planned. The proposed new structure is designed to accommodate 125 patients. It is expected to cost about $125,000. Mr. Perry C. Wilkes has recently been elected superintendent of this hospital.

# PREVENTION OF BLINDNESS
# MATERNITY

*Conducted by* CAROLYN CONANT VAN BLARCOM, R. N.
*Secretary National Committee for the Prevention of Blindness; Chairman Committee on Prevention of Blindness and Midwives National Organization for Public Health Nursing.*

## Illumination and Eyestrain

BY ELLICE M. ALGER, M. D.,
Professor of Diseases of the Eye, New York Post-graduate Medical School.

The term "eyestrain" is applied to that group of symptoms which result from overwork, and may occur in perfectly normal, healthy eyes. Near effects are seen by focusing, a muscular effort which, when long continued, causes fatigue and necessitates a period of rest. When the eyes tire sooner than they should because of muscular weakness or because of astigmatism or age, defective vision or pain may result. If the light is overbright or if the retina is hypersensitive, the result is likewise disturbance of vision or pain. The results of eyestrain not only include pain in the eyes and functional defects of vision, but quite possibly may result in organic eye disease. They cause 80 percent of the chronic headaches, and often result in functional disturbances of other organs and in

Fig. 1. The right and wrong ways to read. Light is to see by—not to look at.

conditions of general nervous exhaustion and irritability. Most of the symptoms that result from eyestrain are capable of aggravation by improper lighting, and many are primarily caused in this way.

Light is the sensation excited in the retina by the impact of vibrations in the ether, the longer ones giving sensation of red, while the shorter ones cause in succession all the colors of the rainbow. The mixture of all these together produces the sensation of white. There are longer invisible waves which can be felt as heat, and shorter or ultra-violet ones which have a very active chemical effect. Many of the effects of sunlight, like sunburn and snow blindness, are due to this chemical activity.

### THE INFRA-RED AND ULTRA-VIOLET

The north light is taken as the standard of illumination, as it is the steadiest, the pleasantest, and the best diffused, causing the fewest shadows and affecting color values least. All artificial lights are intended to copy more or less the good qualities of daylight, but, though we are perhaps getting nearer and nearer to it, there is no artificial light just like daylight. The light which combines the maximum of illumination with the minimum of irritation to the eye is composed of the yellowish rays from the middle of the spectrum, and for this reason the old-fashioned student lamp enjoyed a well-deserved popularity. But most artificial lights contain a much higher proportion of the violet or chemical rays, and some of them contain ultra-violet rays as well. Their chemical activity may be very great. Nearly everybody has experienced the discomfort and premature fatigue that comes from reading by unshaded incandescent lights. It is quite possible, too, that the cumulative chemical effects of light, whether natural or artificial, are more serious, among the conditions which have been plausibly attributed to it being senile cataract. It is well known that stokers and glassblowers, who have to face very brilliant incandescent light, have a tremendous predisposition to cataract, while in the ordinary cataract of old people the process generally begins in the lower part of each lens, which is the most exposed to sunlight from above.

Fig. 2. Lights hung close to operator's face. Such an arrangement is exceedingly harmful to the eyes.

### GLARE

Oculists have long realized the irritative effects of bright light in many degenerative changes in the retina and choroid, and the use of amber or tinted glasses intended to soften the light and exclude the actinic rays has become almost a popular fad. The human eye even in daylight has to adapt itself to many variations of brightness. When the light is dim, the pupil dilates, and, when it is bright, it contracts sharply, any sudden extreme muscular contraction of the iris being painful. Constant exposure to bright light causes in many people premature fatigue. Still more tiresome and painful is the rapid dilation and contraction of the pupil that results from flickering light. Long-continued exposure to bright light causes retinal exhaustion, the retina being capable of reacting only to abnormal stimulation. Everyone has experienced the comparative blindness caused by going from bright sunlight into a dimly lighted room. Workmen often insist on having their light too bright because they have become so accustomed to it that they cannot see without it. Even if they suffer no harm from the glare, they cannot possibly work as long without fatigue. Sometimes the

retina, instead of being blunted, becomes so hyperesthetic as to be almost incapable of bearing any exposure to light at all. This condition is seen at its worst in hysterics, but it is also very common in certain trades, like those of the gilders and polishers, who have their attention fixed for long periods on bright surfaces.

DIFFUSION

Daylight has such a volume and is so diffused that objects get light from all sides and few shadows are caused. Proper diffusion is the secret of all successful artificial lighting, but in many industries almost no attention has been paid to this point. It is important not only from the standpoint of efficiency, but of safety, as the retinal anesthesia and deep shadows that result from poor artificial lighting are potent factors in causing industrial accidents. Less intensity and better diffusion are the needs. When intelligently used, the eye is one of the best of photometers, since it is by its adaptability to that eye that all artificial lights must be judged. One should begin with a low illumination and gradually increase it until a point is reached when further increase ceases to improve the details of the work in hand. Beyond this an additional light is both unnecessary and fatiguing.

Abnormal fatigue is admittedly one of the greatest predisposing causes to physical or mental breakdown. In

Fig. 3. Street car, showing glare from uncovered lights.

our modern life the eyes are used constantly for work of a kind for which they were never intended. The result even in normal eyes is a muscular and nervous fatigue, which is greatly increased by both over or underlighting. In the majority of individuals whose eyes are still further handicapped by astigmatism or other refractive errors the strain is greater. It has been plausibly argued that eyestrain, and perhaps the constant exposure to intense light of short wave-length, may be predisposing factors to the neurasthenia from which garment makers admittedly suffer.

ARRANGEMENT

The arrangement of lights, too, is a matter of as much importance as their brightness. Everyone knows the discomfort and blindness that comes from having a bright light shining directly into the eyes; and yet machines are often so placed that the operator has to face a window or a light. The same difficulty occurs in trades like those of the gilders and polishers, who have bright lights reflected into the eyes from their work, and in schools, where the smooth, shining pages of the books answer the same purpose. I have seen it entirely forgotten in the placing of hospital beds. So far as possible, light should fall from above, behind, and to one side. It should be enough, but not too much, should throw no shadows on the work, and

Fig. 4. Well-lighted school room, showing use of indirect lighting and lighting by means of adjustable reflectors.

should not be reflected into the eyes of the workers. The arrangement of light for many workers in a factory or school is more difficult, and presents many technical details to be left in the hands of the illuminating engineer.

Bad lighting often costs more than good, and from the standpoint of efficiency it always does. Bad lighting undoubtedly causes unnecessary eyestrain and premature muscular fatigue; it compels close and unflagging attention to the details of work, which should be done almost automatically and without conscious effort. Each individual does less work than he should, there is a larger percentage of mistakes and material spoiled, and the number of accidents, large and small, is vastly increased. Even under ideal conditions the extreme subdivision of factory work, with its monotony, largely destroys the pleasure of work, but bad eyes, poor lighting, and long hours are important factors in the industrial discontent of the day.

Scientific shop management implies good lighting as one of its first requisites. The color and composition of the light that enters the eyes can be regulated by the interposition of screens or shades which shall absorb the rays not desired, or by having it reflected from suitable colored surfaces. Volume and intensity can be regulated by increasing or diminishing the number of units, and by diffusing it with frosted shades or by reflecting it from roughened ceilings. But, while the experts are agreed on the principles involved, they do not agree entirely on the details. The human eye can adapt itself to very wide variations in illumination, but there must be comparatively narrow limits within which the greatest efficiency may be reached. Different industries often require different types of illumination, which must all be subjected to the final test in the shop or school.

Illumination as a science is yet in its infancy. Even in great public buildings, libraries, and theaters it is treated rather as a decoration than as an essential, and, if such buildings are badly done, one can hardly expect as yet that any great attention will be paid to the proper lighting of the ordinary factory or house.

# DEPARTMENT OF LIFE EXTENSION

Conducted by EUGENE L. FISK, M. D.,
*Director of Hygiene, Life Extension Institute, Inc.*

Please address items of news and inquiries regarding Department of Life Extension to the editor of this department, 25 West Forty-fifth street, New York City.

## Diseases of Modern Life

Old age and death are such universal phenomena that we accept them as necessary and inevitable. I do not predict an elixir of life or hold out the hope of earthly immortality, but simply deny the necessity of old age and death as we now witness them.

True, I have claimed that there is no necessary law of mortality, allotting a certain span of life to man, regardless of what may happen to his body. I claim that we know of no such law, and that man grows old and dies because he is injured, poisoned, or infected, and not because the mechanism of his body is wound up to run a certain limit of time.

I recognize that, in the nature of things, it is impossible for man to escape a certain degree of injury, of poison, and of infections, which must ultimately overcome his resistance. His inherited or acquired resistance and the degree of injury, poison, or infection to which he is subjected are the factors that determine his longevity, and not some physical law that predetermines the limit of his span of life.

As men grow old, we say that they show the marks of time. Now, time is a mere mathematical abstraction. Time can no more age or kill a man than can the rule of three. It is what happens in the course of time that counts; here is where personal hygiene or the scientific care of the body steps in and shakes a club in the face of that old bugaboo, Father Time, and tells him to begone with his ridiculous symbols, his scythe, and his hourglass. Men grow old and die not because an old man with a scythe and an hourglass is after them, but because their bodies are neglected, because they are continually attacked by billions of microscopic enemies that we are finding ways to meet and conquer. As a matter of theory, it is entirely possible to conceive of ideal conditions under which the human body could continue indefinitely in a condition of good health, defying old age. These ideal conditions are probably not attainable in practical life, but they involve no negation of natural laws and conditions, and they have been attained as applied to simple organisms. Carrel has taken cells from the chicken embryo and kept them alive and growing in the laboratory, showing none of the usual signs of age and decrepitude, simply by maintaining certain conditions of nourishment and periodically washing them of poison. These cells are, of course, protected from injury or infection. Now, conditions in the human body are such that the safeguarding of all of these billions of cells in this manner is practically unattainable, but a certain degree of protection from injury, from poison, and from infection is attainable, and already has been accomplished, with a resultant striking effect on the death rates. This result is almost wholly due to the successful fight against infective or communicable disease.

Speaking generally, therefore, we may say that diseases of modern life include more particularly those of chronic, insidious infection, and of wear and tear, rather than those of acute epidemic infections. The days of plagues and epidemics are about over for civilized communities, the so-called epidemic of grippe and pneumonia being merely an increased prevalence of maladies which we always have with us, but which take on a more violent form or an increased incidence probably because of special conditions of exposure during trying weather conditions. A glance at the mortality movement of the past thirty years shows that such, indeed, is the trend of modern mortality that the attacks of bacteria, which, in current war phraseology, might be described as "drives," are being more and more successfully met by public hygiene and public health activities, while the "nibbling," as the French general term is, is increased in force and effect, and is forcing back our lines of defense. This "nibbling" arises from what is termed "focæ infection" bacteria located in various parts of foci in the body and from there keep sniping at our arteries, or stomachs, or kidneys, and in the course of time take trench after trench of our defenses until we succumb to some acute, sudden onslaught, or gradually sink into the decrepitude of old age, which, as we now usually see it, is the final stage of chronic infection. As we study mortality figures, the "nibbling" process seems to have made unduly rapid progress in this country. We find an increase in the death rate from these chronic diseases which cannot be accounted for on any other reasonable hypothesis but that of a lowered resistance in the population. Death rates in the later periods of life are rising in keeping with the rise of mortality from the chronic diseases of middle life and old age.

These are facts that all who are interested in the care and training of our youth must seriously consider if they are to utilize their opportunities to the higher degree. The treatment of these well-advanced chronic diseases in the middle-aged and the elderly is a far less promising field than the guidance of the young in building up resistance to such maladies.

A glance at a few charts will give us a bird's-eye view of present mortality trend and fix more thoroughly in our minds the degree of present needs.

To meet the conditions revealed by these figures is not easy in the absence of more certain information regarding all the causes that are lowering resistance; nevertheless, our line of procedure seems in a general way very clear. First we must inculcate a sense of responsibility in parenthood, so that future generations may start with better human material out of which to fashion life. I will not go into this subject in detail, but insist on its vast importance. Next, we must proceed to apply the principles of personal hygiene or right living in an intelligent and systematic way. This means that, in addition to teaching the general principles of right living as they apply to the so-called healthy and sound, we must ascertain individual needs and characteristics, and apply modern knowledge precisely and definitely in correcting defects, and training the individual to make the most of his endowments, even in such a generally helpful work as physical training. Much harm may be done directly by trying to build up by strenuous means a body that is organically defective or chronically poisoned or infected. The harm may come not only from overstrain of organs or arteries, or the dissemination of infection from foci, such as the tonsils when they are septic, but from the sense of false security given by

athletic training; the feeling that rational health measures are being followed, while all the time the "nibbling" of the streptococci or the pneumococci is going on and the real effective measures for checking it are neglected.

The first and fundamental step, therefore, after the individual is on the earth is to arrange for his periodic examination, so that his body may be kept free from all foci of infection and his organic defects and weaknesses known, so that measures for his upbuilding may be properly directed and controlled. The best public health work is done in communities where vital statistics are kept, where there are spot maps of unsanitary conditions, where there is the most precise knowledge of the degree of the evils that are being attacked; so the best results in individual hygiene will be attained where a spot map is made of the individual's weaknesses and defects as well as of his strong points, and the condition of his body checked up from time to time in order to measure the effect of his living habits, of his work, rest, and play, and determine such means as may be taken to improve his life.

Physical training and health culture should not be a sort of Procrustean bed, where the subject is sawed off if his legs are too long or stretched out if they are too short. Even so apparently innocent a practice as water drinking or exercising for a free perspiration may be overdone in certain objects. In diet, how easy to err without some knowledge of the organic condition of the individual. So this periodic examination, then, is the first great step. What follows must depend on what is found. There are certain guiding principles, however, which must be borne in mind as we face the problem of checking these diseases of modern life.

I dislike the term "diseases." It implies some entity, some mysterious process to which the sufferer is condemned, instead of a combination of tissue changes, the result of manifold processes, mostly of an infective nature. Certain organisms attack certain tissues, and we call that a disease, but it is really no more a disease than is a bruise or a fracture. It is a multiplying of injuries to cells. Protect the cells, and there is no disease. Lacking certain elements in our diet, and the so-called disease beri beri, or scurvy, or pellagra develops. This is no mysterious entity, no progressive malady to which the sufferer is condemned by some higher power.

When ill, search for the microbe or poison. A man who dies from a dose of cyanide of potassium is not said to have a disease; neither should we so regard these infective processes that underlie so many chronic changes. These are tissue changes due to injury. Defend the tissue and there is no disease; neither is there old age, as Carrel has shown.

Temperance all along the line—working, playing, and even resting. It is possible to rust out as well as wear out. But what is temperance for one is "wasteful and ridiculous excess" for another; hence the fundamental principle of periodic examination.

There are two great groups of causative factors in the development of these chronic maladies.

1. Improper living habits; overeating, especially of meat and of rich, highly seasoned foods; too little exercise; too much exercise; prolonged, exhausting manual labor or athletic excess; abuse of alcohol and tobacco; the disease of vice.

Hard work in which one has an interest, not carried to the point of undue strain or interference with the normal sleep, exercise, diet, etc., is not in itself harmful. Overstimulation of any kind, excessive emotional excitement, and prolonged mental strain may, however, cause the human mechanism to break down instead of running down.

"Lopsided" brain work and bad mental hygiene—i. e., too much or too little work, too much or too little play—are important factors in bringing on premature disease. The brain worker needs some physical play and mental work.

2. Chronic infections. Many of the chronic degenerative diseases of adult life are due to persistent insidious infection by various forms of bacteria. These bacteria find lodgment in diseased gums and tooth sockets, nasal cavities, tonsils, and other localities favorable for the development of germ life. From these localities they move out into the circulation and into the tissues, like submarines from a base of supply, attack various organs and often cause troubles in the heart, kidneys, blood vessels, stomach, gallbladder, appendix, and joints. Sluggish, dammed-up bowels are also often a source of chronic infection and poisoning that give rise to circulatory and kidney affections.

There should be periodic examinations to determine the physical condition and any possible source of infection, with removal of the infection if any exists; and then regulation of living habits, so that the individual may, so far as possible, be adjusted to his life work or his life work adjusted to his physical capacities.

## SURGICAL OPERATIONS IN MOTION PICTURES

### Medical Schools and Teaching Hospitals May Adopt the "Movie" Method With Students and Staff Men

Members of the New York County Medical Society recently witnessed a series of distinctive motion pictures showing the details of intricate surgical operations. The pictures were taken from a distance of eight feet and are said to show each movement of the surgeon more clearly than can be seen from a clinic amphitheater. The films were designed to be used only for educational purposes among doctors and students of surgery, and consequently the views are confined strictly to the scientific side of the operations.

Accompanying the pictures were explanations and diagrams showing just what was being done. Dr. J. Bentley Squier, who conducted the demonstration, tracing each operation from the first incision to the final stitching, explained that the idea in having the films made was that such films would afford an opportunity for students of surgery to follow quickly and accurately the new developments in their field; students would be enabled to see, for instance, exactly how a new operation was performed by the man who had originated it perhaps in a distant city.

The films are not for public exhibition, but probably will be used in medical colleges and libraries, where it may soon be possible on short notice for any surgeon or student to call for just the film he needs to teach him the details of an operation he himself must perform without delay.

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A plan to make every hospital in Philadelphia a health center, with a social service branch devoted to the prevention of disease, was discussed at a recent meeting of the Infant Mortality Committee of the County Medical Society with representatives of the various hospitals of the city. The plan as presented by Dr. Charles V. Dorwarth, chairman of the committee, was approved by all present, and will be laid before the boards of trustees of the hospitals. The City Bureau of Health is said to be cooperating in the movement.

# INSTITUTION LIBRARIES

Conducted by E. KATHLEEN JONES,
*Librarian McLean Hospital, Waverly, Mass.; member Institutional Libraries Committee, American Library Association.*

Please address items of news and inquiries regarding Institution Libraries to the editor of this department, McLean Hospital, Waverly, Mass.

## Institution Library Administration in Nebraska

It was in 1907 that the secretary of the Nebraska Library Commission attended a meeting of the American Library Association and heard Miss Miriam Carey, then with the Iowa State Board of Control, read a paper on libraries in state institutions. She came back to Nebraska filled with enthusiasm over the possibilities of the use of the book in prisons, hospitals, schools for defectives, and homes for dependents.

The local situation, however, was somewhat discouraging. At that time there was no central board of control of state institutions, and the positions in the various institutions were at the disposal of the governor and were used chiefly as rewards for political activity. Being of no decided political complexion, state institutions were likely to be Republican one year and Democratic the next, and every change of administration installed a new set of institution employees. Even a Democratic cook was considered quite incompetent to prepare Republican meals. Moreover, the Legislature always pared the maintenance appropriations to the minimum, permitting few expenditures except for the obvious necessities, among which they did not class books. With the frequent changes in administration and the limited appropriations for maintenance, it is not surprising that libraries existed in only one or two of the institutions, and that these few were far below public library standards.

With no centralized administration of the institutions, the Iowa plan of looking after the institution libraries was obviously not for Nebraska. A supervising librarian would be of little use with practically no libraries to supervise and little prospect of getting any. It was a problem of getting both books and expert supervision, and placing the work on a permanent basis, out of any danger of political interference, where it would grow steadily from year to year in strength and usefulness.

We of the library commission felt that expenditures for books should not be left to chance, to be squeezed out of the maintenance funds after everything else had been provided for; that a regular annual expenditure, however small, if carefully planned, would in time result in good working collections in each institution, and that these collections could reach their full measure of usefulness only when directed by a specially trained librarian.

It was not until 1910 that a plan was definitely formulated and the decision reached to ask for an appropriation to be made to the library commission, to be expended by it for the institutions, and for an additional member of the commission staff to take charge of the institution libraries.

Previous to the convening of the Legislature a little campaign was made to give publicity to the idea, and a number of persons became interested; but when the request was made to the Finance and Ways and Means Committee to insert the item in the general appropriations bill, it gave it scant consideration and promptly refused. The secretary of the commission was resigned and ready to accept their action as final, but not so one member of the Legislature who had become greatly interested in the measure. When the committee refused to insert the item, he prepared a petition from members of the House to the committee asking that the item be inserted and reported out to the House. He then made a personal canvass for signatures, explaining the work contemplated and asking each member's support when the bill was reported out. He secured enough signatures to the petition to pass the appropriation with a safe majority, and after that it had clear sailing. This man, a farmer well known in Nebraska for his activities in agricultural progress, should also be remembered for his service to the institution libraries.

The appropriation was available in April, 1911, and in May a librarian was appointed and work begun. The institutions to be served were three hospitals for the insane, two soldiers' homes, an industrial home for women, an industrial school for girls and one for boys, a hospital for crippled children, a school for the deaf and one for the feebleminded, a hospital for the tuberculous, and the penitentiary. The total population of all institutions, outside of the employees and officers, was about 4,000.

Before planning the organization of the work, the librarian made a visit to all the institutions to discover the special needs of each group and to explain to the superintendents how the appropriation was to be used. It was then that we realized for the first time the advantage of going into the institution "bearing gifts." When the superintendents understood that books and magazines were to be furnished the institution at no expense to their maintenance funds, and, moreover, that the amount to be spent for each institution rested entirely with the library commission, they were cordial enough. We all know the allurement of getting something for nothing. We know how many public libraries exist today because it was easy to get a building for nothing from Mr. Carnegie. It worked just so in the institutions, and every superintendent was ready at once to furnish shelving, space, and service for caring for the books to be bought for them by the library commission.

When the librarian returned from her first round of visits, we worked out the details of our organization, and after four and a half years of trial these methods still seem satisfactory. At the beginning of the year an apportionment of the funds is made—one item for traveling expenses in visiting the institutions, one for library supplies, which are bought in quantity and used wherever needed, and a separate book fund for each institution. These are simply estimates for our own guidance, and can be changed at any time should a special need arise. From our appropriation we pay for books, periodicals, library supplies, and binding, and each institution supplies the furniture, such as shelving, reading tables, periodical racks, and the librarian's desk, and the services of someone, employee or inmate, to care for the library.

Books are ordered once or twice a year, and are received, accessioned, catalogued, and prepared for circulation at the commission office, and are then sent to the institution to which they belong. We feel that it is economy of time for the supervising librarian to do as much of the

technical work as she can in the central office. She can fit the ordering, cataloguing, making of bulletins and the like, one into the other, without loss of time, and it seems to us that we are able to keep more closely and continuously in touch with all the institutions through correspondence and frequent visits than through more extended and infrequent visits on which one's whole time is absorbed by the one institution.

When new books are sent, the librarian makes a visit to the institution, goes over the new books with the local librarian, explaining any special uses to which the books may be put, and takes from the shelves volumes to be withdrawn or in need of rebinding. She always visits the wards, or the shops, or the school rooms, as the case may be, to get acquainted with the actual users of the books, and frequently reads aloud or tells stories, to establish a closer point of contact with them, for we feel that, without a personal knowledge of the people in the institution, our book selections might often go wide of the mark.

Our institution population is small enough to make a personal acquaintance with many of the inmates possible, and much of our buying is done with individual borrowers in mind, which makes a rather concrete problem of our book selection and insures us a fair measure of success.

To have the institution libraries managed by the library commission has proved satisfactory in Nebraska. Under the conditions existing when we began, it was the only plan we could devise. Soon after we had the work under way, however, the state institutions were taken out of politics and put under a nonpartisan board of control. We signified our willingness to turn the supervision of the libraries over to the board, should it seem desirable, but the members consulted did not see any advantage in changing, and the commission has continued to administer the libraries. The board of control is ready at all times to support its efforts.

We have demonstrated to the satisfaction of the institutions, I believe, the benefits of well-chosen books in working out their problems, and we have become more firmly convinced than ever of the advantages of a centralized administration, whether under the board of control or the library commission, and of the distinct advantage of having a regular appropriation, even if it is small, at the disposal of the supervising librarian.

Charlotte Templeton,
Secretary Nebraska Public Library Commission.

### Institution Library Notes

Dr. F. B. Williams, superintendent of the State Hospital, Lincoln, Neb., has placed his library and reading room in the rear of the amusement hall. Wall shelving has been put in and also tables for current magazines. Sectional bookcases will be added later to complete the alcove effect and give an air of coziness to the library. This library and reading room are open daily from 3 to 5 in the afternoon. The nurses in the training school of this hospital will be given a course of lectures on books and reading during the spring term. Miss Williams, librarian for state institutions of Nebraska and a member of the Public Library Commission of that state, will give these lectures, which will be based on the syllabus recently published by Miss Jones in the *American Journal of Insanity.*

Is any hospital looking for a trained librarian? The vice-director of the Pratt Institute School of Library Science, Brooklyn, N. Y., writes that among their graduates are several trained nurses whose previous experience would especially qualify them for hospital library positions. She particularly mentions one woman "of excellent education, broad experience, and delightful personality" who was assistant superintendent of nurses in a hospital before she decided to change her profession.

An article on books to read aloud to convalescent patients appeared in the February *Nurse*, and reprints may be obtained at 15 cents each from The Nurse Publishing Company, Jamestown, N. Y.

Inquiries have been received concerning the organization of the Institution Libraries League. At present it has none—like Topsy, it just "growed;" but, as it now consists of about thirty members, it seems advisable that it should take on a definite form and purpose. A change in its name to Hospital Libraries League or Association or Club has been suggested. Any ideas in regard to its organization or name will be gratefully received.

#### NEW BOOKS

Ellen Glasgow's "Life and Gabriella" is heartily recommended as an entertaining and thoughtful novel of present-day conditions in American middle-class life. The men will want the new Torchy book, which is entitled "Torchy, Private Secretary." "Pegeen," by Mrs. Eleanor Hoyt Brainerd; "Persuasive Peggy," by Maravene Thompson, and J. J. Bell's "Wee Macgreegor Enlists," are readable stories of the light fiction order. A "war book" which should have been listed last summer is Eric Fisher Ward's "The Note Book of an Attachè," which is the diary of a member of the American legation at Paris during the first seven months of the war, and is absorbingly interesting. Allied with this is the "Life of Clara Barton," by P. H. Epler ($2.25), which should be of great interest to nurses, and also "Under the Red Cross Flag," by Miss Boardman. A little book called "Young Hilda at the Wars," by Gleason, contains a very readable account of what an English woman and an American girl accomplished with a Red Cross ambulance.

Here is an instance of how little dependence can be placed on bookdealers' catalogues: A certain book company issued in January an annotated fiction list of over 1,000 titles, advertised as "exceptionally good fiction." Although I have read or seen every book of fiction which seemed at all worth while issued during the last twelve years, out of these 1,000 titles only 210 were known to me, and of these 78 had been discarded as problem or psychological novels unsuited to patients—some of them absolutely pernicious. There were only 40 which could be recommended as really first-class books, and most of these were old standbys, written years ago. It was a singularly complete list of unsuccessful novels left on their publishers' hands, dumped on a bookseller's bargain counter, to be sold at a quarter apiece to an undiscriminating public.

The International Conference of Charities and Corrections will hold its annual convention at Indianapolis on May 10 to 16. On hour and a half of one session will be devoted to papers and discussions on institution libraries. It is hoped that there will be a large attendance of those interested in this branch of institution work.

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The new Helen C. Juilliard hospital ship of St. John's Guild, New York city, was launched February 5 at the shipyard of Jackson & Sharp, Wilmington, Del. The new floating hospital, which is a gift to the guild from Helen C. Juilliard, wife of Adrian Juilliard, of New York, will be put into service next July. It is designed to be used throughout the year, being equipped for heating in winter and having a ventilating plant for summer. Twelve hundred patients can be accommodated at a time.

# PHILANTHROPY AND THE PUBLIC HEALTH

Conducted by THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director,
*Department of Family Welfare.*
DONALD B. ARMSTRONG, M. D., Director.
*Department of Social Welfare.*

Please address items of news and inquiries regarding Philanthropy and the Public Health to the New York Association for Improving the Condition of the Poor, 105 East Twenty-second street, New York City.

## Sanitary School Surveys as a Health Protective Measure

BY J. H. BERKOWITZ

I

With the introduction of medical inspection in the public schools for the purpose of detecting diseases, so that contagion may be averted and physical defects requiring treatment removed, the realization has come of the need of likewise discovering and removing defects in school hygiene and sanitation which may have a deleterious effect on the health of the pupils.

Sanitary inspection, as it is carried on at present in most of the cities of the United States, is a perfunctory procedure. There are health and education laws which prescribe sanitary requirements for schools as well as other public buildings, and provide for periodic inspection. There are, however, no uniform laws and no universal standards. While the state laws, municipal health laws, or building codes, or some other regulation, may contain excellent provisions governing the structural features of a school building, they may be entirely silent on ventilation, heating, the care of the plant, or other sanitary provisions.

It would perhaps be impossible to fix the exact measure of the relationship between the child's health and the conditions which surround him in the school without taking into consideration individual predisposition to physical ills and home conditions. It may, however, safely be said that if poor conditions of hygiene and sanitation in the school do not positively hinder a child in its educational progress, favorable conditions are, on the other hand, decidedly helpful.

A clean, bright, well-aired classroom, a clean and airy playground and pleasing aspect of any part of the school plant with which the child comes in direct contact have a cheering influence, and such effect on the pupils' spirits cannot be overestimated as an aid to scholarship. Comfortable desks, blackboards upon which the writing may be seen without straining the eye or body, and comfortable temperature in the room—these are matters which not only tend to bodily comfort, but have a positive beneficial effect mentally as well.

What, then, must these conditions be? To what extent should they be and are they determined and controlled by those responsible for the child's well-being while in school? What standard shall we follow and what ideal shall we strive to attain in so improving these conditions as to remove any possible danger that the school, while developing the child's mind, does so at the expense of his bodily health? The answers to these questions depend on what we know of existing conditions in the schools, and on the results of study and experiment on the part of those whose task it is to develop standards of excellence in these matters.

For these reasons it is necessary to have regular periodic inspection of school buildings, to be carried out according to well-defined methods, such inspections being in the nature of thorough surveys to cover all elements of sanitation, equipment, supervision, and care of the school buildings. Fixed standards must be known, and a definite method of procedure must be followed.

II

The Bureau of Welfare of School Children of the New York Association for Improving the Condition of the Poor

Fig. 1. Insanitary condition of boys' play-yard, which might be prevented by proper janitorial attention to flushing apparatus in toilet.

has undertaken to work out a system of school surveys, in the course of which it is aimed to accomplish the following:

1. Ascertain what are the sanitary conditions in a group of typical schools in New York city.

2. Ascertain what hygienic and sanitary features are dependent on construction, requiring modification to bring them into accord with present-day standards.

3. Ascertain what efforts are made by principals and teachers to insure the full benefit accruing to the children from the sanitary and hygienic provisions made.

4. Test the efficiency of janitorial staff in the maintenance of the school plant and the proper utilization of sanitary equipment.

5. To bring to the attention of the proper authorities such defects as can be remedied, but which might be overlooked through inadequate administrative provision for this kind of work, due to insufficient allowance of public funds for this purpose.

6. To evolve a score card for urban school surveys; this score card to represent the result of the practical application of all known standard tests for school hygiene and sanitation.

III

As a preliminary to the more extensive survey, the bureau, in cooperation with the Bureau of Educational Hygiene of the Department of Education, made a survey of a large public school, with an enrollment of nearly 1,900 pupils, in one of the more congested sections of the

city, which is typical of a large number of school buildings in New York. The survey was made primarily to test a set of inspection schedules formulated on the basis of standards laid down by recognized authorities on school architecture and sanitation. The survey served this purpose, and, in addition, disclosed some interesting facts, among which might be mentioned the following:

1. Conflict of authority between principal and janitor because the latter is not, as he should be, the subordinate of and responsible to the principal directly.

2. Inadequate care of the school plant, due to the negligence of the janitor and his helpers in the matters of hygiene and sanitation.

3. Reckless exposure of children to elements injurious to physical well-being through the indifference and perhaps negligence, or even ignorance, on the part of some teachers as to the elements of school hygiene.

Fig. 2. An unsightly display fraught with danger to health.

4. The remarkably rapid change in standards of school architecture and sanitation, as was indicated by the structural shortcomings in a building little more than a decade old.

5. Commendable efforts made by the school authorities to improve conditions, notably by the installation of sanitary equipment and otherwise to bring the old provisions as nearly as possible up to present-day requirements.

## IV

The quantitative results of the survey are perhaps of very little interest for the present purpose, and of little significance as indicating merely provisions made in one school. The matters which call for fuller consideration are those involving the utilization of available equipment which can be adapted and adjusted to serve the needs of pupils. Type and age of building do not necessarily enter into account in this, but rather the efficiency, interest, and intelligence of the personnel in the school.

1. Defective Heating.—It was not altogether surprising to find that more than 50 percent of the class rooms in the building surveyed were overheated, in view of the reports of other investigations indicating this to be a fault generally found in many schools. The thermostat temperature control system was not in use. A glance at several of the thermostat indicators was sufficient to reveal the fact that these delicate instruments had been handled roughly, thus rendering them useless. Without official authorization, the janitor had abandoned the use of the system.

2. Insanitary Toilets.—Another indication of total failure to grasp the significance of sanitary regulation is presented by the unsightly condition of the outer playground, in one corner of which is located the boys' toilet (Fig. 1). This condition, an index of matters within, was the result of either a break or obstruction in the flushing apparatus in the toilet, resulting in an overflow into the playground. This continued for several days at one time, and occurred again and again, so that in the course of very many observations, covering a period of over three months, this insanitary condition appeared almost continuously. Granted that the structure and equipment of this toilet are antiquated, it is nevertheless a fact that whenever adequate attention was bestowed on it, it presented no such objectionable aspect, thus proving that watchfulness and care was all that was called for, and this much even new, up-to-date equipment will require for its proper upkeep.

3. Housekeeping.—The utter failure of those responsible for cleanliness and decency in the school to apply the most elementary precepts was evidenced by the collection of brooms, mops, slop pails, and other cleaners' implements displayed in one of the main corridors through which pupils and visitors must pass (Fig. 2). Directly across is a class room, the door of which must be kept open most of the time to insure proper ventilation. What an example of housekeeping to place before children! Incidentally, the children occupying the class room looking out on this exhibition were newly arrived immigrant children, constituting a special class for whom particular efforts must be made in upholding American ideals of cleanliness in relation to health. Does not this aggravate the offense?

4. The Good and the Bad.—Three different attitudes may be said to be represented by the conditions found in the corridors of upper floors (Fig. 3). We have here proof of (1) the endeavor of the Department of Education to improve conditions, (2) the negligence of some teachers as regards sanitary conditions, (3) the carelessness of janitorial staff in the use and care of property placed under their supervision.

Fig. 3. Sanitary drinking fountains—an improvement effected by the school authorities; wet, slippery floor and unclean sink due to negligence of those using the equipment.

The drinking water equipment shown in Fig. 3 was originally a washbasin and also part of the drinking water provision in the days of the common drinking cup. Sanitary bubbling heads have been fitted over the basin, thus providing drinking facilities for the children in class rooms on upper floors. This has been done on the upper floors in the new wing of the building, thus affording easier access than to the main equipment on the ground floor.

The floor here has been found constantly wet, owing to the spilling of water by children sent by the teachers to moisten sponges and washrags and to fill basins for the purpose of cleaning the blackboards. A little watchfulness on the part of the teachers would easily obviate this condition, which is as perilous to life and limb as it is unhygienic and unsightly.

The trough and faucets are fitted within a closet provided with an upward sliding door, so that it may be kept closed when not in use. During many weeks of observation it was never found closed. At the same time the condition of closet, trough, and floor has always indicated that the washcloths and mops here prepared for cleaning other parts of the building were seldom, if ever, used here.

5. Failure to Protect Children's Eyes.—In no other respect is the teacher's responsibility for the physical well-being of the pupils better defined than with reference to the protection of eyesight. Posture is important, of course, and the proper adjustment of desks and seats is a controlling factor in maintaining it. Eyestrain is closely associated with incorrect posture, and likewise caused by poor seating arrangements.

Height of desk and seat, distance from each other, distance from blackboard, etc., are some of the factors to be

Fig. 4. Torn window shades, making uncontrollable the glare which is ruinous to children's eyes.

considered in relation to eyesight. The prevention of glare from excessive light and reflective surfaces is of the utmost importance, and yet perhaps the easiest to attain. The proper means being provided, it rests entirely with the teacher. Perhaps the function of window shades and their usefulness are not fully appreciated, but teachers should know that glare and intense direct light cause eye fatigue. This is particularly harmful to the immature and highly susceptible eyes of children.

Unfortunately, in most of the class rooms surveyed the testimony found (Fig. 4) is against teachers and others responsible for the welfare of the pupils. Torn, unworkable window shades, particularly in class rooms with an unobstructed exposure to the rays of the sun, are a menace to children. Aside from the necessity of proper manipulation of shades for the regulation of light, the simple obligation is imposed on the teacher to promptly report any damage which may effectively interfere with the proper use of such shades.

The school authorities can be expected to correct defects only if they are brought to their attention, and the improvement shown in this instance (Fig. 5) might have been long deferred if the matter had continued to rest entirely with teachers and janitors.

V

The conclusions drawn from the survey, as a whole, are too many and too far-reaching to be discussed in a brief magazine article. On the basis of the questions here considered, the following conclusions may be stated:

1. It is necessary to establish by broader survey what are sanitary conditions in public schools.

2. It is essential to develop by practical application standards and methods for the measurement of quantita-

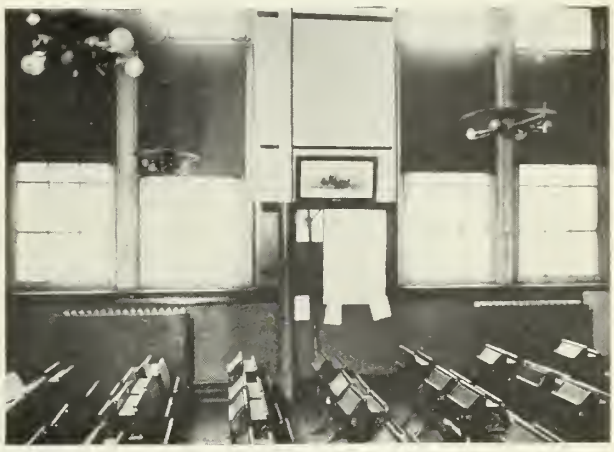

Fig. 5. An orderly room, light properly regulated and window shades in good order, in consequence of bringing former defects to the attention of school authorities.

tive as well as qualitative conditions of school hygiene and sanitation.

3. Improvements brought about in any individual school surveyed, while only incidental, are no less important than the larger results sought.

4. The qualifications of principals, teachers, and janitors should not be considered adequate without a knowledge of school sanitation principles and the ability to apply them through preventive and prophylactic measures.

VI

To the credit of the Bureau of Educational Hygiene and the Bureau of Buildings of the Department of Education, it must be stated that conditions of deterioration and neglect found in the school surveyed have been corrected as far as budgetary allowance would permit for the present.

Enough has been accomplished and data of a sufficiently suggestive character has been secured to justify the Bureau of Welfare of School Children, in cooperation with the above-mentioned divisions of the Department of Education, to proceed with the plan of extensive school surveys.

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Thirty-five Chicago nurses sailed from New York February 2 on their way to a base hospital in France. They are Misses M. Adamson, R. Rauh, A. Neary, A. Fitzgerald, C. Ward, T. Soens, C. Monahan, M. Lonegran, A. McCann, G. Bigely, E. Kandel, M. Williams, I. Walker, M. O'Neil, A. Murphy, M. Lautz, C. Sullivan, M. Fahey, I. Thulis, O. Kepple, C. Parks, M. O'Donnell, and J. Motl, all of Mercy Hospital; Misses M. McGinty and D. Frier, of the North Chicago Hospital; Miss G. Satre, of the Michael Reese Hospital; Miss M. Wallace, of the Polyclinic Hospital; Miss C. Hoffman, of the Illinois Training School; Misses B. Murdock, M. and S. Brown, K. Shea, and A. Johnson. The party was led by Misses Adamson and Rauh, who had but recently returned from the war zone.

# NEW EQUIPMENT

### Electric-Heated Water-Jacketed Incubator

To meet the requirements for the safe application of artificial heat to premature and weak infants, three conditions must be observed:

1. The heat must be of a fairly constant temperature, with a safe maximum.
2. A constant supply of fresh air must be available.
3. A normal average of humidity must be maintained.

I have attempted to meet these requirements by the construction of an electric-heated water-jacketed bed. The bed shown in Fig. 1 is constructed of heavy sheet copper, with inside measurements as follows: length, 30 inches; width, 17 inches; and depth, 13 inches. The entire inner chamber is surrounded, except at the top, by a 1-inch water jacket. Covering the water is a layer of asbestos, and this, in turn, is covered by a copper jacket, making in all three walls of copper, with water between the first and second and asbestos between the second and third. The asbestos practically prevents heat radiation from the external surface, limiting heat radiation to the inner surface of the jacket—that is, to sides and floor. At one end a water gauge glass with faucet registers the height of the water, and is also used for emptying the jacket during transportation and in filling the jacket.

In the floor of the water jacket a ¼-inch pipe is inserted to carry off any water which might flow into the bed in case of a leak, thus avoiding all danger of flooding the crib in event of an accident to the water jacket.

The bed proper rests on a standard (Fig. 1), which is supplied with ball-bearing casters, or with porcelain shoes if preferred, allowing of easy transportation from one ward to another if desirable.

The electric heating apparatus (Fig. 1) consists of:

1. A plate with a 6-inch surface in direct contact with the floor of the water jacket, and specially constructed to carry a maximum capacity of 300 watts, which makes it impossible to heat the water above 155° at a room temperature of 70° F.
2. A rheostat fastened to the standard (Fig. 1) with seven contacts; six of them graduated to take current varying from 25 watts on contact 1 to 300 watts on contact 6. The seventh contact shuts off the current.

For the protection of very frail infants, a partial cover (Figs. 1 and 2) for the tub, 21½ inches in length, is provided to shield them more completely from outside air currents. It is provided with a thermometer, so that the temperature within the tub can be ascertained by the nurse at all times. Further, a brass nickel-plated frame covered by a removable linen cover is provided in the form of a hood (Fig. 2). This can be set over the open space not covered by the metal lid in case of great air currents and extremely cold nights. The hood raises the temperature within the bed on an average of from 5 to 10° F., depending on the room temperature and current used, but does not interfere with perfect ventilation. The hood is made collapsible, and may be set at any angle desired as may be indicated.

The baby basket (Fig. 2), which is of the type used in many obstetric wards, is 28x14 inches and has a depth of 8½ inches, thus allowing considerable air space on all sides, which prevents any danger of the infant's extremities coming in contact with the walls of the heated water jacket. The basket rests on a standard, raising it 2 inches above the floor of the bed, allowing a free circulation of air all around it. A simple removable net cover is provided, which encircles the basket, adding to its cleanliness and appearance. The basket supplied differs from the illustration, being constructed of heavy brass wire mesh, nickel plated, in place of upright bars.

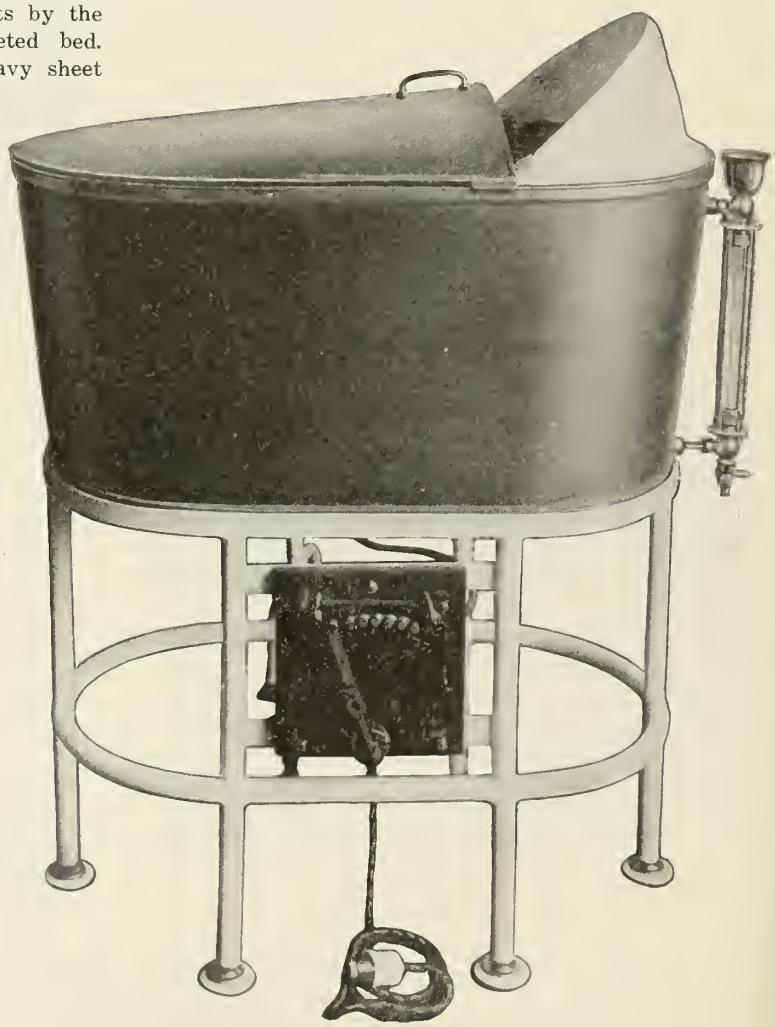

Fig. 1.

Excessive drying of the air is prevented by the constant circulation through the bed of the free air of the room and by evaporation from a flat basin, 9x11 inches, containing baked porous clay (as used in water filters), over which water is poured to allow of evaporation. This is placed on the floor of the bed immediately under the

baby basket. Varying with the degrees of temperature to be maintained within the bed, it is necessary once daily to supply from 8 to 16 ounces of water to replace that lost through evaporation.

The construction of the bed is such that it is intended for use in an ordinary ward or room, giving the infant the advantage of the most perfect room ventilation. The free currents of air within the bed can be demonstrated by allowing smoke to pass over the surface of the bed, which results in the smoke settling in the center, passing over the floor to the lateral walls and up the sides into the room.

We require inspection and charting of the temperature registered by the lid (if the latter is used), or by a register placed within the basket if the lid is not in use, at 6 a. m., 12 m., and 6 and 12 p. m. as most likely times for maximum changes in the ward temperature.

TEMPERATURE CHART FOR INCUBATOR BED

Day of Entrance..... Case No. .....

Name..... Dr. .....

| Date | 6 a. m. | 12 m. | 6 p. m. | 12 p. m. |
|---|---|---|---|---|
| | | | | |
| | | | | |

Fig. 4. This chart has twelve lines, and is 5 inches wide and 8 inches long.

As the only variable factor in the maintenance of temperature within the bed is that of the changes in temperature in the surrounding room, I have made numerous calculations at different room temperatures and have tabulated them on a card at the head of the bed, so that the attendant need know only (1) the temperature desired on the inside of the bed and (2) the room temperature in order that by looking at her chart she may ascertain the number of the contact point at which to place the rheostat.

The advantages offered by this apparatus are:

1. Safety. The maximum temperature to which the water can be heated with this special stove is about 155° F., with a room temperature of 70° F. and rheostat on contact 6, this giving a maximum temperature within the bed of about 110° F., with the lid and canopy on.

2. Economy of construction, operation, and, most important, the elimination of the trained attendant.

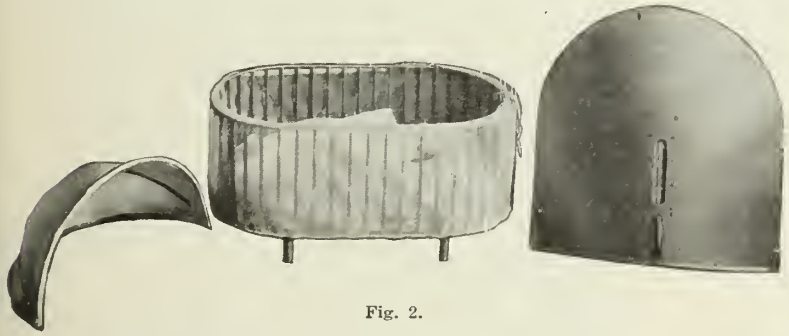

Fig. 2.

3. Simplicity of operation. It needs practically no attention unless there are extreme ranges of temperature in the ward, since the asbestos insulation prevents radiation from the outer surface of the bed, and the heater holds the water at a constant temperature. We rarely find it necessary to change the rheostat more than twice daily.

4. Perfect control of ventilation of air within the bed in the general wards of the hospital.

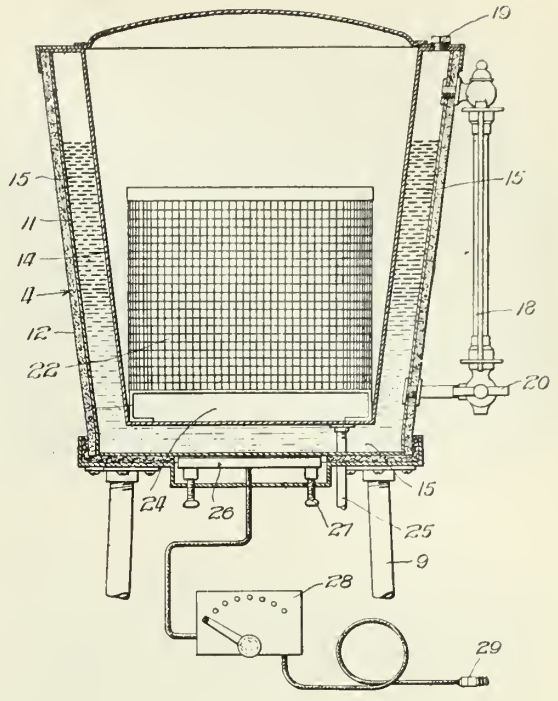


Fig. 3.

Fig. 3. 4, copper wall covering asbestos layer; 9, stand supporting bed; 11, 14, inner and outer walls of copper water jacket; 12, asbestos layer insulating water jacket; 15, water within jacket surrounding sides and floor of bed; 18, water gauge; 19, plug in opening used for filling jacket; 20, cock for emptying jacket; 22, removable crib; 24, air space underneath crib; 26, heating plate; 28, rheostat; 29, electric plug.

5. Humidity, which is little lower than that of the surrounding air (hygrometer, Taylor Instrument Company).

I have had four in the infant incubator beds in use in the wards of Michael Reese Hospital for periods varying from four to fourteen months.

JULIUS H. HESS, M. D.,
Associate Professor and Head of the Department of Pediatrics, University of Illinois, College of Medicine.

## Use of Hospital Garbage—How One Institution Sterilizes Waste Food for Feeding to the Swine Herd

Hospital or sanatorium garbage furnishes a fairly well-balanced food for pigs, and can be used to advantage if care is taken to prevent broken glass or china, soap, etc., being thrown in the cans, and the garbage is sterilized. Garbage is commonly sterilized by boiling in a cauldron kettle, and this method, while effective, is objectionable in that it necessitates emptying from the cans into the kettle and scooping out after cooking. The labor is thereby increased and disagreeable odors permeate the vicinity. The method here described obviates to a large extent both of these objections, as the garbage is sterilized in the same can in which it is collected.

*Description of Can.*—The cans are made of No. 10 B. W. G. sheet steel, closely riveted and fitted with 1½x⅛-inch reinforcing bands at bottom and top and six vertical reinforcing irons; the bottom of the can is ½ inch above bottom of reinforcing band. Each can is fitted with a reinforced gasketed top, with permanent gasket and three cast-iron screw pattern wood clamps arranged to secure it in place. The dimensions of the can are 18 inches in diameter by 24 inches high.

Fig. 1. The complete installation, showing cans with steam connections.

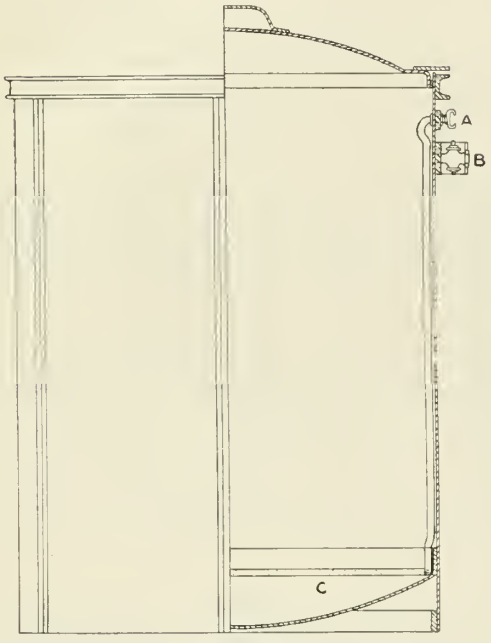


Fig. 2.

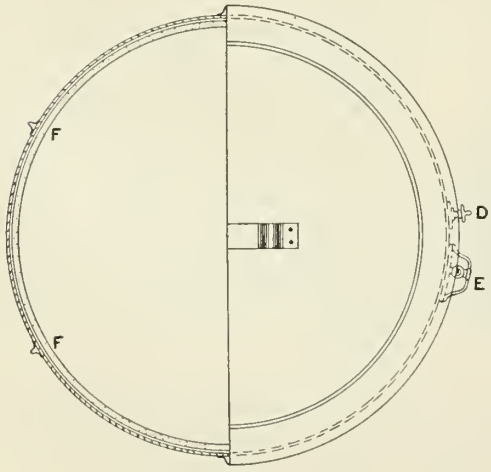


Fig. 3.

Figs. 2, 3. Sterilizing garbage can connected to steam main pipe (upper) and steam hose connections from outlet in can to overflow and vent pipe (lower). A, hose connection to steam supply; B, overflow cock; C, half-inch perforated pipe; D, steam connection; E, overflow cock shield; F, half-inch brass perforated pipe.

Near the top of the can a ½-inch overflow and ½-inch steam openings are provided, each fitted with a brass bayonet-joint hose coupling for connection. The steam or sterilizing pipe is of ½-inch brass, and extends down inside the can, with a perforated coil once around the bottom. The overflow opening is 2 inches lower than the steam opening, and is fitted with a lock shield cock and guard for protection during handling and transportation. Two drop handles are riveted to the sides of each can. The cans are thoroughly galvanized inside and out after being built, and proved tight at cold water pressure of fifty pounds per square inch.

*The Sterilizing Room.*—A small room, either in the hospital or at the farm, should be set aside for the cooking of garbage. At Mount McGregor this room is in the power house, near the entrance to the tunnel, through which the garbage is transported daily from the kitchen. A room used for this purpose should have ample light and ventilation, washable walls, and impervious floors with a floor drain. It can be fitted with a medium pressure steam main (Fig. 1), with as many branches as may be necessary to connect with the cans. An overflow and vent pipe, which is connected directly to the blow-off tank and from which steam hose connections are made to the cans, affords an outlet for excess steam and odors.

*Operation.*—The garbage is emptied directly into the sterilizing cans at the scrapping table in the kitchen. Once a day the filled cans are taken to the sterilizing room, where five cans are connected at one time to the steam main, connections being made at the same time to the outlet pipe, and a steam pressure of ten pounds maintained for one-half hour, after which the cans are transported to the farm and the garbage is fed to the hogs.

This method of sterilizing garbage has been in operation during the past two years at the sanatorium. There has been no sickness or infection of the herd of nearly fifty thoroughbred Berkshire hogs, and, although the pigs have been fed garbage exclusively up to the last two weeks before slaughtering, their growth and prolificacy have been normal. Doubtless some of this success should be attributed to the care taken to prevent as far as possible the entrance of foreign material into the garbage. Doubtless, too, the fact that the garbage is not allowed to accumulate, but is fed fresh, has something to do with the excellent halth of the herd. Pigs react quite as unfavorably to stale or decomposed food as do human beings.

Although the garbage cans have been transported two miles daily from the sanatorium to the farm, none have shown signs of marked wear or damage.

Howard John Howk, M. D.,
Physician in Charge, Metropolitan Life Insurance Company Sanatorium, Mount McGregor, N. Y.

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City Solicitor Harvey L. Boutwell, of Malden, Mass., has drawn up a bill for the state Legislature which will allow cities and towns to club together in groups to build tuberculosis hospitals. The Massachusetts law now compels individual municipalities to provide them. The Malden Finance Commission reported, after an investigation of these hospitals, that in most cases 80 percent of their expense falls on the municipality and only 20 percent is received from paying patients, and that the annual maintenance equals the original cost.

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Dr. E. A. Hines, secretary of the South Carolina Medical Association, and editor of the journal published by the association, has resigned the superintendency of the Anderson County Hospital at Anderson, which position he has held for the last year, and will resume private practice at Seneca.

# NEW INSTRUMENTS AND APPLIANCES

VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.
Please address items of news and inquiries regarding New Instruments and Appliances to the editor of this department, 327 Southeast avenue, Oak Park, Illinois.

## Mouth Gag With Lip Retractor

BY DR. F. W. ALTER, Toledo, Ohio.

The Whitehead mouth gag, as originally designed, was principally intended for use in cleft palate work. During the last few years, however, it has become the most popular mouth gag with the profession for use in tonsil and adenoid operations. This instrument is one of the

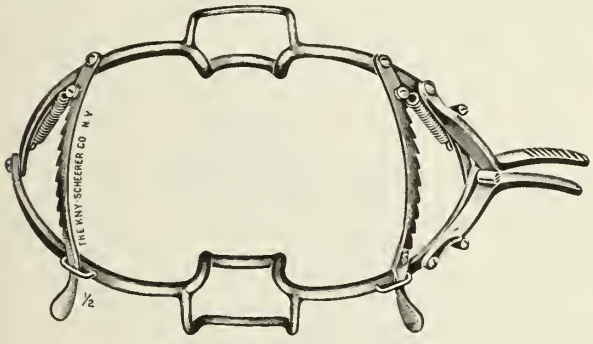


Fig. 1. Whitehead mouth gag with Alter's lip retractor.

few employed for keeping the mouth open that will stay in position without being held by an assistant, and there is but little danger of breaking the teeth. One complaint, however, has often been made about it—that the patient's lips will occasionally be pinched. In order to overcome this disadvantage, Dr. Alter had a mouth gag constructed with lip retractors added for both upper and lower lip, and with this improvement one can safely recommend this instrument as one of the most serviceable mouth gags ever offered to the profession.

Fig. 2. Mouth gag in position, showing the method of lip retraction.

## The Etherometer—An Apparatus for Mechanical Administration of Ether

Whenever a new apparatus for the administration of anesthesia is brought to the attention of the writer, he is reminded of an incident that happened to him about fifteen years ago. A doctor entered the store and wished to be shown anesthesia apparatus. After several types had been demonstrated, he wanted to know the price of the cheapest mask without a dropper. On being informed that the price of the well-known Esmark wire mask was 40 cents, he stated he would be hanged before he would waste

Fig. 1. Etherometer and accessories.

40 cents on a chloroform mask; he had used a towel for the last ten years, and a towel would be good enough for him in the future. This doctor was by no means the only one in those days who gave the subject of anesthesia so little consideration, and the general idea seemed to be to "get them under" somehow or other. The profession is to be congratulated, however, that in late years there is a different attitude in regard to this matter, and that many earnest students of this subject have spent much of their time and money to devise apparatus by which anesthesia may be given by any intelligent assistant with comparative safety.

A new apparatus has recently been put on the market

under the name of etherometer, which was devised by Dr. Frederick Montgomery, a man who has had extensive experience as an anesthetist in the Woman's Hospital, New York. The apparatus consists of only three parts: (1) an air-tight graduated glass container, in the metal cap of which are arranged an air intake and shut-off valve, drop regulator, and sight-feed; (2) a flexible capillary tube connected with the bottle and mask, through which the ether is delivered, drop by drop, as indicated by the sight-feed, to the mask; (3) the mask, the face portion of which is perforated, and through the small openings the ether is diffused upon the gauze covering of the mask.

The method of operation is as follows: after the bottle has been filled with the requisite amount of ether, a few compressions of the hand pump are sufficient to charge

Fig. 2. Etherometer in use.

the flask, when the bulb is detached from the apparatus, the cap replaced, and the air valve sealed; thereafter the etherometer will deliver the anesthetic automatically under the direction of the anesthetist until the container is empty.

The controlling mechanism is very carefully worked out, and a slight twisting of the top cap accelerates or retards the flow of the anesthetic. The drop indicator shows the rate of drops, which may be gradually increased if any excessive irritation is anticipated, such as palpation of the gallbladder before closing the wound. pulling on the cervix, etc., or diminished toward the close of the operation, and so enabling the patient to emerge from the anesthesia by easy stages.

The inventor states that in the majority of operations, when the requisite number of drops per minute has been established in the first fifteen or twenty minutes of the anesthesia, the etherometer will do its work practically without attention for the reason that, when the patient has been properly anesthetized by the administration of so many drops per minute, the maintenance of this amount of anesthesia will insure the patient remaining properly anesthetized.

Dr. Montgomery further claims that with the etherometer this amount can be positively maintained, and that the anesthetist never needs to feel that the patient is going to come out, no matter how lightly he may have been anesthetized. This will give him a feeling of security, while ordinarily he is disturbed by doubts unless he has the patient so deeply under that he knows there is no danger of any sudden change.

In contrast to some of the other mechanical anesthesia apparatus, this outfit is very small, the height of the container and cap, etc., being only 7 inches and the mask is of the conventional size.

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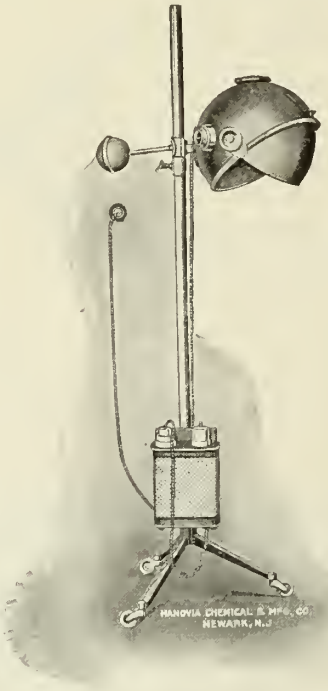
### The Alpine Sun Lamp

Since the publication of the works of Bernhard (St. Moritz), Rollier (Leysin), and others, systematic heliotherapy has been receiving increasing attention in this country both by private practitioners and in certain special hospitals and sanatoriums. Although much brilliant work has been done, climatic conditions, absence of sunlight during long periods, and contamination of the atmosphere by smoke, etc., have made marked success possible only in a few specially favored localities. Great importance attaches, therefore, to the introduction of a suitable artificial source of the ultraviolet rays to which most of the healing power of sunlight must be admittedly ascribed.

It is well known that the mercury vapor lamp is particularly rich in ultraviolet light, and with the invention of the Heraeus quartz burner, providing an envelope which absorbs none of the valuable rays, a lamp has been produced which is claimed to be superior to natural sunlight. It has the further advantage of being available




Alpine sun lamp.

everywhere, independent of climatic or atmospheric conditions. It also permits of a far more accurate dosage than is possible when employing sun treatment. This is the Alpine sun lamp, as illustrated.

It is built for both direct and alternating current at 110 to 220 volts. The quartz burner in which the arc plays is about 4 inches long, air cooled, and mounted in a spherical reflector case, as shown. The lower half of this may be turned back completely to allow the light to radiate a large area, or the rays may be applied locally through the adjustable apertures of a shutter also provided in the lower reflector. The lamp is usually mounted on a movable stand, which also carries a rheostat, snap switch, and nonreversible plug and socket. At 110 volts the lamp con-

sumes only 4 amperes and yields about 1,500 candle power. As quartz remains unaffected at temperatures at which ordinary glass would become liquid, a light of unusual intensity and great wealth in ultraviolet rays is produced.

As in the case of natural heliotherapy, the field in which perhaps the most striking results have been achieved in hospital clinics on a large scale is localized or surgical tuberculosis. Again, in the dermatological departments of numerous large hospitals, Alpine sun lamps are now employed for many of the superficial skin complaints, such as acne, psoriasis, eczema, furuncle, ulcers, abscesses, alopecia, etc., with very satisfactory results. Another large field of ultraviolet light in hospitals is post-surgical treatment of wounds. Not only does the light have a powerful bactericidal effect, which prevents complications, but the granulation and healing of the wounds is materially accelerated and scarring prevented. This property of the rays has been of real benefit in the many military hospitals maintained in Europe at the present time, and accounts for the extensive use of Alpine sun lamps by the various armies.

In all these applications, local action of the rays is accompanied and assisted by the general tonic effect of the light and its soothing influence on the nervous system. It is this indirect action in creating a strong and lasting hyperemia of the skin, and thus reducing blood pressure and stimulating metabolism, that gives to ultraviolet light treatment such a wide field of usefulness.

### Automatic Pedestal Operating Table

The operating table illustrated here is one of the new type of which several have been previously described in this department. It is patterned after the well-known

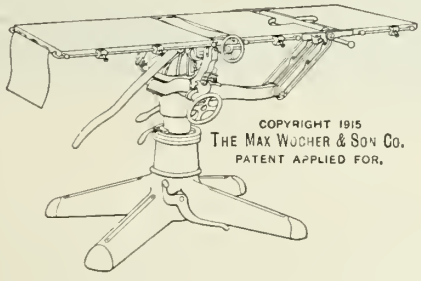



Fig. 1. Cincinnati automatic table in horizontal position.

Bern (Switzerland) table, but it has some additional features which are not possessed by the others.

Instead of being raised or lowered by a foot pedal, this operation is done by the anesthetist with a hand lever. The lateral position can also be obtained, as this table

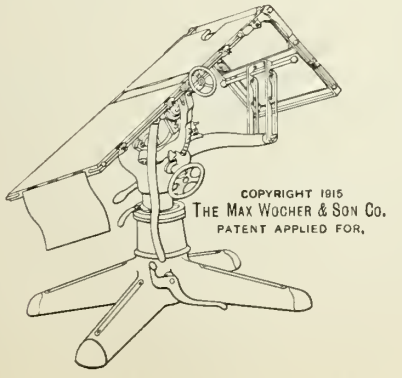



Fig. 2. Cincinnati automatic table in lateral position.

may be tilted to either side and firmly locked. This lateral position permits of free drainage in ovariotomy, gallstone, appendectomy, peritonitis, and other abdominal operations. An additional improvement not found in other tables of this type is a round, revolving, removable tube support for the knees while the patient is in the Trendelenburg position, which prevents to a great extent the numbing of the lower extremities. There is also a cut-out in the middle section of the table, which facilitates operation in prostatic lithotomy, and perineal work.

The pedestal stands firmly on four heavy legs, but for

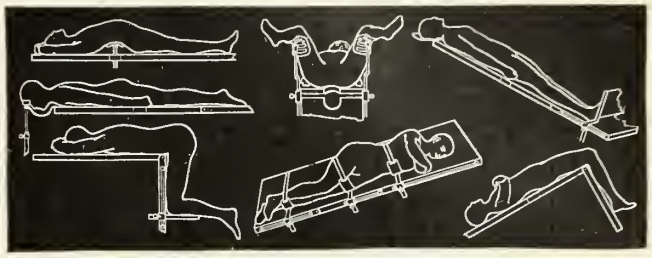


Fig. 3. Principal positions obtainable with the Cincinnati automatic table.

the purpose of moving the table, concealed casters are provided, which are controlled by a foot lever or caster release. Every position used by surgeons may be obtained from this table, and some of them are shown in the outline in Fig. 3.

The usual attachments, such as head rests, lateral support, knee crutches, shoulder supports, etc., are provided, and in addition also a head support with floor stand for cranial work. The pedestal is white enameled, the working parts nickel plated and the top is made of non-corrosive, highly polished nickelloid.

### A Portable X-ray Tube Stand

The development of transportable radiographic apparatus has, during recent years, been rapid indeed. Portable coils, of the induction and Tesla types, as well as interrupterless transformers, are now being built, and if properly handled are capable of producing excellent results. Many of such equipments are used in hospitals and sanatoriums where the larger and more extensive x-ray equipment has not been installed. In others, use of a portable machine is made in certain cases where it is more desirable to bring the x-ray apparatus to the operating or patient's room.

X-ray examination with the fluoroscope has in many cases proven of wonderful help in the operating room, where it would be impractical to attempt to do the operating in the x-ray laboratory.

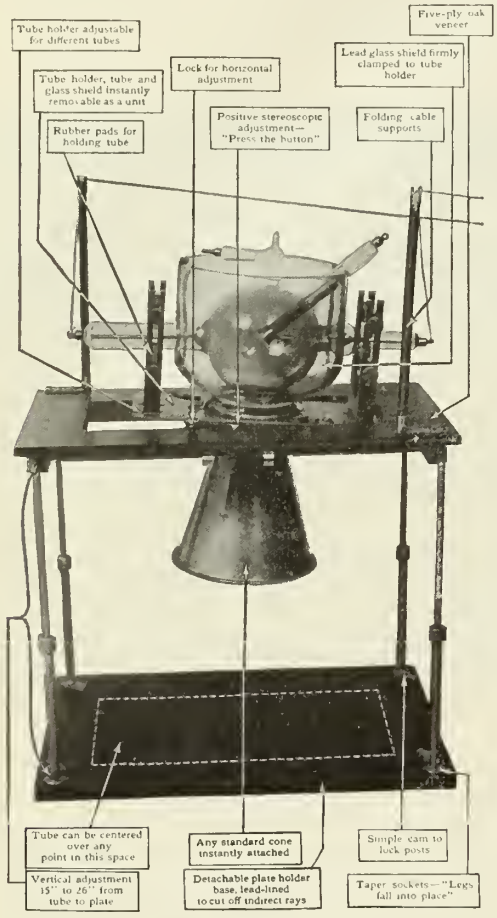
There has been in the past one principal difficulty in producing good x-ray plates with the portable machines, namely, that the tube holder as ordinarily furnished with the portable coil is not steady, resulting in slight movement of the tube during the time the exposure is made.

The usual form of iron floor stand is not practical for portable purposes on account of its size and weight. The ordinary wooden tube stand does not fulfil the requirements, since no protection is provided.

The portable stand here shown has recently made its appearance on the market, and has many points in its favor. The general plan in design is something after that of the Albers-Schoenberg compression diaphragm, but far less complicated. The base serves as both holder for the uprights which support the apparatus, and as a plate

holder. This base is lead lined, so as to absorb secondary rays. Mounted on the base are the telescopic supporters. These supporters can be adjusted vertically from 15 to 26 inches tube distance.

A simple and efficient method of attaching the supporters has been worked out, so that, in common with other parts of the stand, a quick assembly can be made. The upper portion, consisting of the lead glass protection


Tube holder adjustable for different tubes
Five-ply oak veneer
Lead glass shield firmly clamped to tube holder
Lock for horizontal adjustment
Tube holder, tube and glass shield instantly removable as a unit
Positive stereoscopic adjustment—"Press the button"
Folding cable supports
Rubber pads for holding tube
Tube can be centered over any point in this space
Any standard cone instantly attached
Simple cam to lock posts
Vertical adjustment 15" to 26" from tube to plate
Detachable plate holder base, lead-lined to cut off indirect rays
Taper sockets—"Legs fall into place"

The Peerless radiographic stand

shield, the tube holder, platform, spreaders, etc., are mounted on a five-ply veneer base, this preventing any grounding of the patient to the tube. The finer details in the adjustment of the tube have been worked out to an extensive degree. For instance, it is possible to make stereoscopic plates either horizontally or vertically. In fact, any conceivable position of adjustment of the tube can be accomplished in a few moments' time. The apparatus, fully folded up, may be placed in a case measuring 14 by 22, 3 inches thick, not including the tube-shield or compression cone. These articles are generally carried separately in the case containing the x-ray tube.

### "Daylite" Glass for Microscopic Work

This new glass, when placed in front of a nitrogen-filled tungsten lamp, gives a white light having the same color and spectral energy distribution as natural daylight. This enables the microscopist to work with artificial light with the same degree of certainty as to color values and distinction of colors as when working with daylight. Although this glass gives absolutely true color values only when used with a nitrogen-filled tungsten lamp at 2,850 degrees absolute, it gives a very close approximation when used with any tungsten lamp or acetylene flame; in fact, it is a great help with any light source. In laboratories which must depend more or less on artificial light, this glass will be found to be a great help.

### Laboratory Table

A growing demand for a table suitable for laboratory work has necessitated some changes in this type of table. The table illustrated is proving very satisfactory to hospitals, sanatoriums, and institutions where laboratory work is done. The table is of ample size, being 48 inches long and 24 inches wide. The table top is of one piece of heavy

Laboratory table.

polished plate glass, enameled on the under side, with black center section for differentiating. The two shelves are of polished plate glass, 48 inches long and 8 inches wide, equipped with guard rail to prevent bottles from being pushed off. The frame is of rigid tubular steel construction, bridged in front so as to permit working close up to the table. The three drawers are of pressed steel, and the frame and drawer are finished in white enamel.

### DeLee Dressing Table (Electrically Warmed)

The illustration shows an infant dressing table built at the suggestion of Dr. J. B. DeLee, of the Chicago Lying-in Hospital. This table has many desirable features, and is a source of great convenience in a hospital maternity dressing room. The top and the shelf for toilet articles are made of monel metal, a noncorrosive metal, easily kept clean; the cabinet, for diapers, towels, etc., is built of steel, with double walls, and finished in white enamel. The electrical heating unit is attached to the bottom of the cabinet, and the cabinet being constructed with double walls, the heating unit, by the circulation of warm air, warms and keeps warm the table top and the articles stored in the cabinet. The electrical heating unit being attached to the bottom, and the warm air ascending to

the top through the double walls, eliminates any danger of getting the table top too warm. The table is 48 inches long and 24 inches wide, and the shelf for toilet articles is 48 inches long and 5 inches wide, being provided with

DeLee dressing table.

railing to prevent articles from being pushed off. Different sizes can be made to order to suit individual requirements. Two of these tables are in use at the Chicago Lying-in Hospital and are proving satisfactory.

## MINNEAPOLIS CONCENTRATES HEALTH WORK

### Municipal Hospital to Be Center for Handling Relief Work Throughout the City

A new method for handling the city's sick and injured has been adopted in Minneapolis. The present police ambulance service will be discontinued, and, instead, four motor ambulances and five assistant city physicians will be provided at the city hospital. Two of the ambulances are to be used for accident cases, one for the sick and one for contagious cases. Under the present plan the hospital sends physicians to aid the needy poor. When medicines are necessary the physician leaves a prescription. In cases of extreme poverty it is often necessary for the benefited person to go to the hospital for the drugs. The new system will do away with this. Every physician will be provided with all medicine necessary. Each ambulance will be a miniature drug shop. Drugs will be furnished gratis. Prisoners in the city jail, prisoners about to be sent to the workhouse and all other cases now handled by the police surgeon will be handled in the new way.

Improvements to be made at the Macon Hospital, Macon, Ga., in the near future will include one new four-story building, one new three-story building, the remodeling of the present hospital, and the erection of a building for boiler rooms, garage, laundry, storage, kitchen, etc. The largest of the new structures will be devoted mainly to private rooms, a maternity department, a children's ward, and an operating suite. The new three-story building will contain charity wards and accommodations for patients with minor hurts. The administrative office of the institution will be established in the old main hospital building, which was originally a residence. Plans for the proposed improvements have been drawn by Architect Alexander F. Blair, Forsythe building, Macon, and Edward F. Stevens, 9 Park street, Boston, Mass.

# LETTERS TO THE EDITOR

### Ann Arbor's Psychopathic Hospital—Medical Director Objects to Having His Institution Ignored—Is One of the Oldest in the Country

To the Editor of THE MODERN HOSPITAL:

My attention has been called to a paragraph that appeared in THE MODERN HOSPITAL for December in the division of "Queries and Answers," on page 454. This paragraph relates to the number of psychopathic hospitals in this country. The statement is made "that there are only four specially designed psychopathic hospitals in this country."

Allow me to call your attention to the fact that the University of Michigan has had a psychopathic hospital since 1906. This institution, the State Psychopathic Hospital at the University of Michigan, was the first to be established in this country. It is a specially designed psychopathic hospital and is the university clinic of psychiatry. It has a capacity of 62 beds and an annual admission service of about 250 patients.

If it is convenient, I will be very glad if you can make this correction. ALBERT M. BARRETT, Director,
Ann Arbor, Mich.

### How One Man Financed a Hospital

To the Editor of THE MODERN HOSPITAL:

In your article in the February issue on "Some Administrative Problems in Hospital Buying" you so accurately portray the past condition of the Thomas D. Dee Memorial Hospital, of Ogden, Utah, that your remarks might be construed as personal. A small, but excellent and well-equipped, hospital had been launched, free of debt, by the munificence of one wealthy family, but, being without endowment, regular subscribers, or other outside income, at the end of four years had accumulated an indebtedness exceeding $17,000 over and above the bills of the current month.

During the four years the founders of the hospital had dropped many thousands of dollars into the ever-increasing deficit, but now, refusing to proceed farther, proposed to liquidate all outstanding indebtedness and close the institution. A resolution giving sixty days' notice of the intended closing was passed by the board of directors and published, which action had the effect of greatly reducing the patronage of the institution.

About a month previous to this resolution a very ordinary retired business man, who knew nothing whatever about hospitals, had been installed as manager with the hope of either resuscitating the institution or having a competent party in charge of the obsequies. This was sixteen months ago. The new manager used the methods indicated in your article, but, unlike your "specialist," was given an entirely free hand. At no time did the board of directors or any committee of the board make any suggestions as to what, when, or where goods should be bought, but the majority of the board being business men, themselves heads of institutions financially much greater than the hospital, willingly gave most valuable advice when asked. The new manager made no attempt to pay off old indebtedness, which was eventually taken care of by donations, but immediately commenced to pay cash on all new purchases, thus being enabled to get bottom prices. A distinct line was also drawn between running expenses and betterments—no expensive improvement was undertaken without a donation for that express purpose being first in sight. At the end of sixteen months, although no

outside assistance has been had in paying running expenses, and although during that period the income of the institution was less by $594, every bill of every nature incurred during that time has been fully paid from the income of the hospital, the institution now being without debt or deficit of any kind.

As far as possible, all purchases have been made through local wholesale houses. Last month a rumor, probably unfounded, came to the ears of the manager that the wholesalers, instigated by the retailers, had decided to raise the price to consuming buyers like the hospital. When the manager visited the wholesale houses for bids on next month's supplies, he confronted them with the rumor, and stated that he would purchase all supplies from Chicago and San Francisco traveling men who represent houses selling to exactly such customers if any signs of a holdup appeared, the result being that, instead of any advance, a slight reduction on former best prices was obtained. It is probable that if your "hospital expert" had been untrammeled, he could easily have beaten the "combination of tradesmen" instead of their winning "with hands down."

The Dee Hospital has 65 beds, and is the only hospital in this city of over 30,000 population. The business men are certainly as keen as the average, but, if any tradesman is of so small a caliber as to desire to hamper the hospital by such methods as you describe, he has not yet been heard from. To the hearty cooperation of Ogden's business men is partially due the creditable financial condition of the Thomas D. Dee Memorial Hospital.

O. J. STILWELL, Manager.

(The article to which Mr. Stilwell refers was written by Mr. Cornelius S. Loder, of New York, and recited an experience in which the merchants of the town conspired to compel the hospital to purchase all its supplies of them without reference to prices.—EDITOR.)

### Hospital Activities Out West—Dr. Whitman, of Los Angeles, Writes Interestingly of Hospital Legislation, Medical and Nursing Education, and Politics

To the Editor of THE MODERN HOSPITAL:

You ask me to write something for THE MODERN HOSPITAL as to what the hospital people are doing on the Coast, and what the legislators are thinking about doing to the hospital people. As to what is being done by hospital people other than at the Los Angeles county institution, I do not feel that I am well enough informed to discuss the matter intelligently, except in a very general sense, and, as to what the legislators are thinking of doing, the Lord only knows. We must be content with the thought that our lay friends who are in the Legislature mean well, even though at times their new laws play havoc with our established methods.

Considering the eight-hour law—which, of course, means even less than seven hours per day for student nurses, as it is forty-eight hours per week and not fifty-six—the alien law, the civil service interference, and the three-year course for nurses, we are sorely pressed. I will not take up your valuable space with a discussion of these subjects because I believe hospital people are practically of one mind concerning the perniciousness of many state laws regulating hospitals.

The average California statesman is nothing if not original. He cares not for precedent, but is progressive in all things. It is for him to lead—not follow. We take it that this, however, is only another expression of the greater willingness of the so-called West over the East to try new things, or rather to break away from old established routine. Of course, sometimes the innovations result in improvement, but sometimes not. Fortunately, the Legislature is not in session this winter, except by special call of the governor for the adjustment of one or two political matters.

In a general way, there is considerable activity in the hospital line on the Coast, principally, however, with county institutions. San Bernardino county is building a new hospital; Santa Ana county has built a very creditable hospital; San Diego county has improved its hospital; Santa Barbara county, Fresno county, and Sacramento county have been making improvements; the new state hospital for the insane at Norwalk is under way, and will soon be ready for patients.

Building in connection with the Los Angeles County Hospital has been constant for the last seven years, and within the next ten to twelve months $500,000 will be expended in hospital additions, consisting of a tuberculosis sanatorium with a capacity of 400 beds, a six-story service building, dining room and kitchens, enlarging power and lighting plant and laundry, and minor betterments.

With the completion of the tuberculosis building this hospital will have about 1,800 beds. At present there are nearly 1,400 beds, which I believe makes it the second largest general hospital in the United States, Cook County Hospital being the largest. The patient population averages between 1,100 and 1,200. The County Farm, which is located some distance from the hospital, has a patient population of about 700—mostly senile cases. Farm inmates are not included in the hospital count, as it is under separate business management, although, as medical director of the Department of Charities, I have charge of the professional service there also.

The medical staff of the Los Angeles County Hospital consists of 1 medical director, 2 assistant medical directors, 1 psychiatrist, 1 pathologist, 1 roentgenologist, 1 anesthetist, 1 pharmacist, 1 registrar, 1 dentist, 26 interns (to be 28 July 1, 1916), and about 200 nurses, orderlies, and attendants.

There are about eighty of the leading medical men of the city holding appointments on the attending and clinical staff of the hospital, and all of these are associated with one or the other of the two regular medical colleges—medical department of the University of California and medical department of the University of Southern California. Applicants for positions on the attending staff of the hospital must be nominated by the dean of the medical college, and the appointment rests entirely with the medical director of the hospital, thus eliminating all politics.

The interns are selected from a civil service list following a competitive examination. These examinations are held annually at Los Angeles, San Francisco, Chicago, and this year also at Philadelphia, Cincinnati, and New Orleans. The term of intern service is eighteen months. They receive no cash remuneration, but board, room, and uniforms are furnished.

I believe with Dr. Smith, superintendent of Johns Hopkins Hospital, that, second to providing care and treatment for the sick, the larger hospitals of this country, especially those located at or near medical centers, should be utilized for teaching purposes in the broadest sense—namely, "for the education of physicians, medical students, nurses, patients, employees, and the community." It is well known that the hospital over which Dr. Smith presides as superintendent is far in advance of all others in this country, so far as its scientific and educational features are concerned, but it has no political connection. Instead, it is heavily endowed, and its affairs are left to a

board of intelligent free men—free to act as their judgment dictates.

The Los Angeles County Hospital is fortunate in that only members of the faculty of the two great California universities have service in its wards, and, as all of these men are engaged in teaching scientific medicine to medical students, and as this hospital furnishes the principal clinics for the students, it can readily be seen that this is an educational institution as well as a hospital. As to the teaching of nurses, this is by two to one the largest training school west of Chicago. Of the nearly two hundred nurses, more than seventy are graduates, and many of these are graduates of this training school, where a full three-year course is required. Educational requirements for entrance to the training school consist of a complete high school or two-year high school course, or its equivalent. The Los Angeles County Hospital, while far from leading in social service work, has made a fair start, and this year has doubled the force of workers in this hospital.

The reputation of this hospital as a teaching institution is now firmly established, due to the high standing of the men who comprise the attending staff of medical specialists, as well as to its vast clinical resources. There is an ever-increasing inquiry from eastern and middle west medical colleges for internships in this hospital. Probably not less than two hundred senior students will write the civil service examination in March next for these positions, and less than twenty will be students of California colleges.

If this letter partakes too much of the personal, I will have to select some other subject next time.

C. H. WHITMAN,
Medical Director Department of Charities, County of Los Angeles.

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### Insists on Low Figures

To the Editor of THE MODERN HOSPITAL:

In your November number of THE MODERN HOSPITAL, page 344, I notice that you have reproduced a clipping from the *Times-Union*, of Jacksonville, Fla., giving the approximate cost of building and equipping our proposed municipal hospital. Since your criticisms of the figures and other such things are so vehement, and since you feel such a deep interest in the welfare of the people of Jacksonville and higher hospital service generally, I am glad to accept your challenge in support of the approximate figures that reached the *Times-Union*.

Between the lines of your first paragraph it is easy to see that you have acknowledged that graft and wastefulness galore are such common occurrences in hospitals that they are looked on by a large majority of people as necessary elements to the very existence of such institutions. I rejoice, however, in the truth that some few people—yes, even laymen—are waking up to the fact that, because an enterprise operates under the name of a hospital and cares for the sick, it is not right to gull and swindle the populace out of all their worldly possessions. I feel that my citizenship for the past ten years in Jacksonville in the medical profession, and my familiarity with the hospitals and methods of conducting such institutions here, altogether give me a special fitness for this discussion. I regret very much that you have made such a vigorous effort to mislead the citizens of Jacksonville in regard to the cost of building and operating its municipal hospital. I notice that you defend the charge of $2.04 that a certain hospital here has been making against the city of Jacksonville for the care of its indigent patients. This hospital has charged as high as $2.61 per patient per day, saying that that amount represented the actual cost, but it has been most interesting to learn what has recently happened. A few months ago a few of the physicians and other citizens inaugurated a searching investigation, and succeeded in uncovering the dry bones of the whole situation. This same institution now finds that it can afford to make a proposition to the city to take care of its indigent patients for a flat rate of $1.50 per patient per day, which offer the City Council has accepted. They also have opened the wards to the public at the same price. This institution has no endowment, but is self-supporting. I invite each reader to make his own deductions.

The figures set forth in these estimates are the results of many months of investigation, both in the hospitals here and many other cities. Your statement that they are ridiculous remains yet to be proven. As to the building, the plans were drawn by Mr. C. F. Streeter, a very reliable architect of this city, who is a specialist in school and hospital buildings. He drew the plans and specifications for a four-story and basement reinforced concrete building, then submitted them to a well-known contracting and building firm who are engaged in constructing just such buildings, and they go so far as to say that the buildings could be erected for a little less than $50,000. This building, you must remember, is not a pavilion plan, but a one-building hospital.

As to your criticism of cost of foods, raw or prepared, I want to say that my figures as to the food were taken from the books of the dietitian of St. Luke's Hospital of this city. Her figures show a cost of 9 cents per meal, or 27 cents per patient per day prepared. The Duval Hospital here, owned and operated by the county, having several separate buildings, are operated on about 75 cents per patient per day. They have none of the labor-saving devices that we figure in the new hospital. For some of my figures, especially such items as laundry, drugs, and groceries, I consulted a hospital superintendent of many years' experience here, in Europe, and in South America, and she states that they are ample. The architect who designed the proposed hospital gave me the figures on equipment, and I have verified them. The plan of the hospital is for large wards containing 16 beds each, and such a plan would not cost anything like $200 per bed to equip. If you care to investigate this matter further, as I have done, and find out what some other cities are doing, you will be convinced that there are a few other places where bad management and useless waste have been supplanted by good judgment and economy, and that a modern hospital can be built and maintained in such a manner as not to literally bankrupt the community. For instance, the indigents in the city of Birmingham, Ala., are taken care of at a cost of 75 cents per day; in Montgomery, Ala., at $1 per day; in Wilmington, N. C., at $1.07 per day, and in Cincinnati, O., at $1.25 per day.

No doubt the stockholders in hospitals appreciate the friendly (?) warning you have given the unsuspecting public in Jacksonville, because they do not care to see the number of such institutions farther multiplied here, but your unwarranted criticism has fallen on deaf ears, as the taxpayers in Duval county are very wide awake on this hospital question, having seen a few little things with their own eyes under the limelight of shrewd investigation.

And until you or someone else care to go deeper into the question of a hospital of this character in Jacksonville, these figures stand, as I can prove them. I will also ask you to give this communication as prominent space as you have given the article criticising my figures.

MARK B. HERLONG, M. D.

# THE HOSPITAL KITCHEN

Please address items of news and inquiries regarding The Hospital Kitchen (such as equipment and other matters connected with the kitchen and dependent departments of food storage and service) to The Modern Hospital, Kitchen Department, Metropolitan Building, St. Louis.

### Equipment of a Large Hospital Laundry

This first article deals with the installation in the Cincinnati General Hospital because this laundry, in the opinion of several laundry experts, is one of the most complete hospital laundries in the country, and consequently it can be taken as a model of the maximum that a hospital laundry should contain, and will serve as a comparison to show what has been left out in the model plans for smaller hospitals which will follow this first article.

The laundry of the Cincinnati General Hospital is divided into two departments, one caring for the laundry work of the officers, interns, nurses, and other employees, and the other taking care of the patients' work, the two departments being in the same building, separated by a corridor.

About 3,500 pieces per day are handled in the staff laundry, consisting of uniforms and personal wearing apparel, and consequently the work to be done is practically the same as that taken care of in a commercial laundry, and the laundry had to be equipped in a similar manner. The floor plan shows the arrangement of the machines, which are all driven by individual motors.

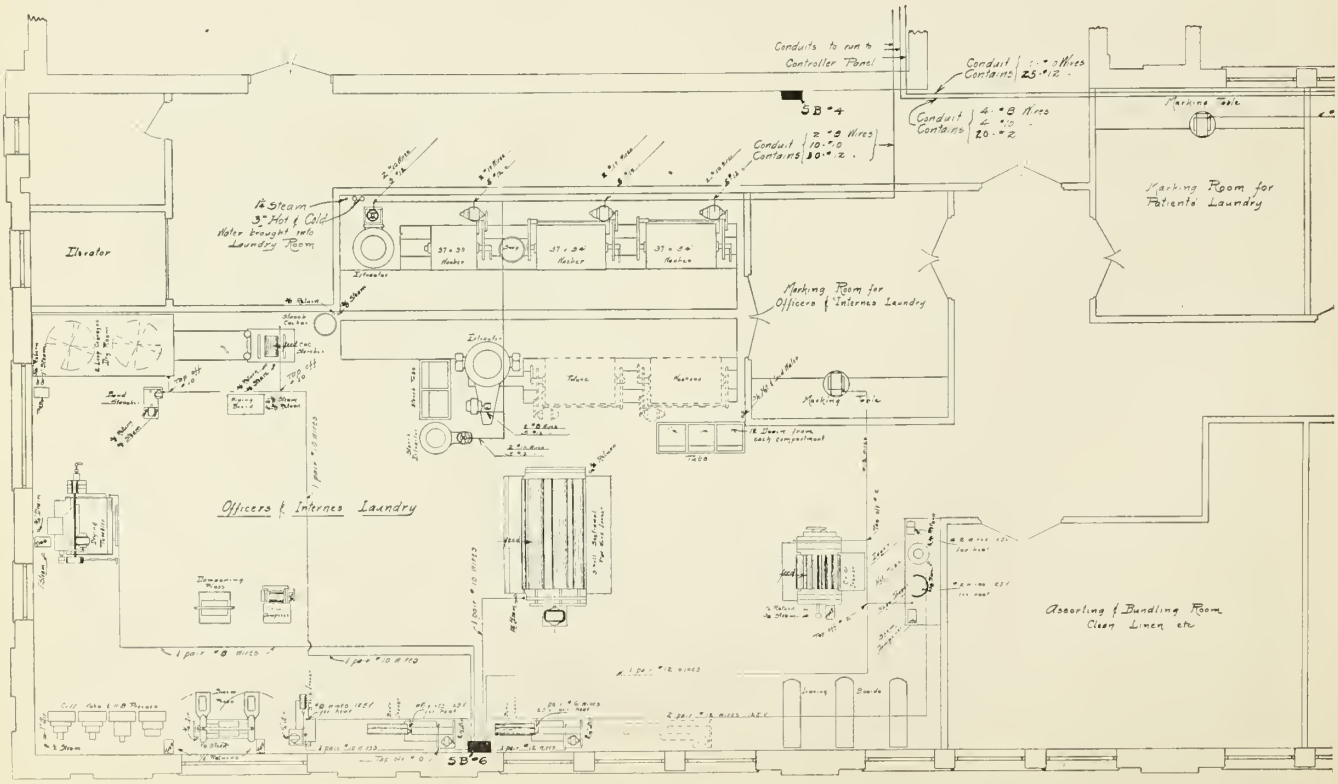
The washing is done in three large metal washers, the clothes then being put in one of the two large extractors, one of which, 32 inches in diameter, is overhead driven, and the other, 26 inches in diameter, is of the solid curb type. Drying is partly accomplished in a large drying tumbler and partly in a motor-driven metallic dry room.

The starching department is unusually well equipped, being provided with a copper starch cooker, a 20-inch starch extractor, a band starcher, steam-heated wiping board, and a 14-inch collar and cuff starcher, all these machines being of the latest type.

The ironing department is a very complete one. Flat work is ironed on a 100-inch three-roll flat work ironer. Aprons and uniforms are done on a Universal press. Some of this work is also handled on the body ironers, of which there are two. This department also contains a pneumatic bosom press and pneumatic cuff, neckband, and yoke presses. A large hand ironing department provides for the finishing of this class of work, and the collar ironing department is equipped with a steam collar and cuff ironer and a complete shaping table. All the sorting and marking of pieces is conducted on the same principles as are in vogue in commercial laundries, which have practically the same equipment as this one.

The patients' laundry handles practically nothing but flat work, consisting of sheets, pillow cases, night shirts, flannel bath robes, towels, etc. The wash room in this department has six large washers and two 32-inch overhead-driven extractors. The drying is accomplished in a Vento drying tumbler, one metallic conveyor dry room, and one metallic truck dry room.

The ironing department is equipped with one 120-inch seven-roll flat work ironer and one 100-inch single-roll flat work ironer for the flat work. For ironing night shirts, underclothing, etc., three electrically heated body ironers


Conduits to run to Controller Panel
Conduit Contains 25-#12
Conduit Contains 4-#8 Wires 4-#10 20-#12
Conduit Contains 2-#8 Wires 10-#10 10-#12
5B-4
Marking Table
Marking Room for Patients Laundry
Elevator
Marking Room for Officers & Internes Laundry
Officers & Internes Laundry
Assorting & Bundling Room Clean Linen etc
5B-6

Plan of laundry for

are provided. Garments from contagious wards are sent through the sterilization department in a separate building, divided into two sections, the loading being done into the disinfector or sterilizer in one room and the unloading on the other side of the partition wall. Mattresses, pillows, and articles which cannot be washed are placed in a large disinfector oven. Goods which can be washed are placed in the sterilizer and then washed after being sterilized.

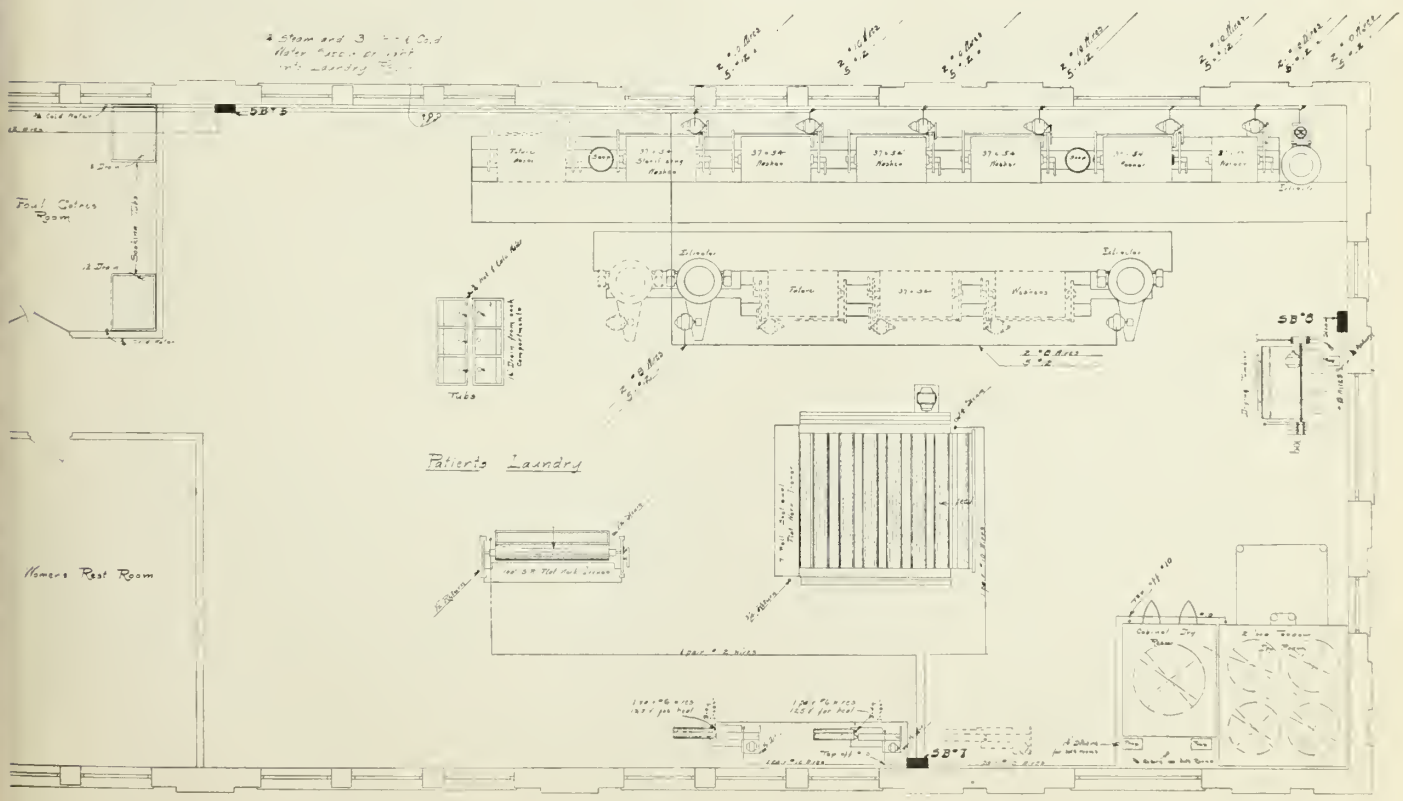
The laundry of the Cincinnati General Hospital handles an immense volume of work. The patients' laundry handles all the work of about 500 patients, amounting to about 5,000 pieces per day, making, with the 3,500 pieces in the staff laundry, a total of 8,500 pieces per day. A staff of only thirty employees handles this quantity of laundry work.

### Genuine Agateware Utensils

There is a prejudice against agateware in the minds of a good many hospital people, most of which is unjustified, as there are many uses for agateware utensils in the hospital kitchen to which utensils of other materials do not lend themselves so advantageously and economically. The ostensible reason why agateware has been supplanted in hospitals by the more expensive aluminum was because of its liability to chip. When a pan was burnt, the edges of the burnt place were liable to chip off and get into the food, or, if the pan was struck too hard by a spoon or knife, a chip fell off. On the other hand, the partial nonconductivity of agateware, owing to its similarity to glass, made cooking of certain things less susceptible to burning, and food stored or cooked in these utensils was never liable to discoloration; besides, the agate utensil was never liable to discoloration or corrosion by anything put into it. It is a well-known fact that the one thing which injures aluminum is plain water, which always leaves a scum on the vessel, whereas no deposit is possible on genuine agate and many things are kept fresh in cold water.

One of the principal reasons for the prejudice against agateware is that a very large percentage of the utensils purchased by hospitals are not agateware, although sold as such and having exactly the same color and appearance to the layman's eye. In order to understand the difference between agateware and pseudo agateware, it is necessary to go into the process of manufacture to appreciate why the price of agateware is really the test of whether it is the genuine article or the imitation.

Genuine agateware is produced by first stamping the utensil out of steel; the imitation is also stamped, but at this point the process of manufacture diverges. Genuine agateware is next placed in an annealing furnace in order to extract the impure ingredients in the steel metal, which are thus extracted and deposited on the surface. The next process is cleaning and buffing, which leaves the steel with a silver-like brilliancy. The utensil, after being twice nickel-plated, is then ready for the agate coating. The imitation agate, instead of going through these three processes, is only immersed in an acid bath, which removes the surface impurities and leaves the metal porous so as to make the enamel coating stick, but all the impurities are left in the steel. It is then given a coating of ordinary vitreous enamel, the principal ingredient of which is glass sand, colored to exactly imitate agate, which is applied and then vitrified at a high heat. On the other hand, genuine agateware, after being twice plated, is coated with an enamel the principal ingredient of which is agate, the stone familiar to us as the highly prized marbles of our youthful days—marbles which were worth many ordinary glass marbles in barter—and many laboratory utensils for special uses are manufactured out of this agate. The annealing process, the double plating, and the use of genuine agate instead of ordinary sand, naturally enhance the cost of production and consequently the selling




new General Hospital, Cincinnati, Ohio.

price. The looks of an imitation agate utensil, however, being the same to the untrained eye as that of the genuine, and the price being much lower, naturally the uninitiated have bought the imitation agate, with its glass coating and all the impurities in the steel, ready to come out whenever the steel is exposed by chipping.

The extent to which the sale of imitation agateware exceeds that of the genuine may be gleaned from the case of a city of about 500,000 population, where the manufacturers of genuine agateware sell only to four stores and jobbers, while every department, hardware, and 10-cent store carries the spurious article.

White enamel, while looking better and more sanitary than agate, is not really so, and in many cases the excessive use of arsenic in its manufacture makes it even dangerous. Certain brands of white enamel, however, do not contain arsenic to any dangerous extent, and it behooves purchasers to ascertain the safe brands to buy and to remember that first cost is not the test of the reliability of any white enamel kitchen utensil.

The cost of genuine agateware is the same all over the country within a very small percentage, and any divergence in price is the danger signal which infallibly announces the advent of the imitation; besides, each piece is stamped "agate" and has the laboratory certificate on it.

### Glass Cooking Utensils

Five years ago it would have been considered quite impossible to make cooking utensils of glass on account of the breakage due to unevenness in expansion and contraction, and yet glass was being made to stand the changes of temperature to which conductors' lanterns and signal lights are subject; and today the uses of a glass developed from this railroad glass might not have been discovered but for the accidental borrowing of a glass laboratory dish the right shape in which to bake a pudding. Contrary to the expectations of the learned chemist, the pudding was a great success, and the glass dish came through without a crack. From that small beginning Pyrex glass cooking utensils of the same shapes as the earthenware and porcelain cooking utensils are made, and they withstand the temperature changes incidental to cooking better than the earthenware and equally as well as the porcelain.

The chief value of glass cooking utensils, from the point of view of the hospital, lies in the fact that glass has a heat conductivity approximately 50 percent higher than ordinary glass and nearly twice as high as earthenware of corresponding thickness; consequently, food in a glass receptacle cooks very much faster than in earthenware, and also faster than in a metal utensil because, although the metal has a higher heat conductivity than the glass, the latter absorbs heat to a far greater degree than metals, which reflect much more heat than they absorb. The capacity of glass to absorb heat is valuable because it retains the heat in the food during transit in hospitals to a very much greater extent than any other material.

An investigation at the McAlpin Hotel in New York, where the glass has been in use for four months past, developed the fact that the hotel managers were well pleased with the result. The ware is being used principally for individual orders of shirred eggs, rice puddings, chicken pie, etc., served in the same dish in which they are cooked. They report that the ware stands high temperatures for long periods without breaking, and the smooth surface makes cleansing easy, while the transparency shows whether the article is clean. It seemed to the representative of THE MODERN HOSPITAL, when in the McAlpin kitchen, that, due to withstanding high temperatures, Pyrex glass can be thoroughly sterilized, and it will find a place in operating rooms, where ordinary glass would readily break when subjected to rapid cooling from high temperature.

Several hospitals are at the present time beginning to use the new glassware, and some definite reports from dietitians are expected before long. The ware is made by the Corning Glass Company, of Corning, N. Y.

### Water in Washing Machines

It is bad practice to use too much water in washing machines. The only limit the machine has is the door opening, which usually allows 10 inches of space to fill with water. This amount is fully three times as much as ought to be used. Washing consists of forcing water through the goods, and in a rotary washing machine this is accomplished by lifting the goods out of the water and dropping them into it, and the greater the drop the greater the power to force the water through the goods.

Actual tests show that where the machine is filled up 8 inches deep, the proportion of loss is as follows compared with 3 inches of water:

In a 36x64-inch wood washer, 8 inches depth = 81 gallons of water.

In a 36x64-inch wood washer, 3 inches depth = 48 gallons of water.

Saving in water.....33 gallons

There is a saving also in fuel to heat the water. Six pounds of soap are necessary in the first case and only three pounds in the second, and only half the bluing is necessary.

It takes two hours and five minutes to wash the load in the deep water, and only one and one-half hours in the shallow, with a proportionate saving in wear and tear on the clothes. The amount of water can be controlled by a water gauge or an automatic valve, the latter being the most dependable, as it eliminates the human equation. All ingredients put into the water should be accurately weighed, as measures are not to be trusted for accuracy. The time allowed for rinsing is very important and should never be shortened to save time.

It is not necessary to have steam in the washing machines, but the hot water system in the laundry must be a circulating one, so that the water is always at the same temperature, which allows the washers being filled with water at the proper temperature. At night the doors of washing machines should always be left open, so that the air can circulate and dry out the machines, thus avoiding spots on wood washers and the formation of verdigris on brass cylinders.

A training school for nurses has recently been opened at the Children's Hospital, Los Angeles, Cal., under the supervision of Miss H. Grance Franklin, who was made general superintendent of the hospital last July. Other undertakings which have been carried out during Miss Franklin's incumbency are the establishment of a free dispensary and a visiting nurses' bureau, both of which, according to a local newspaper, are doing excellent work. Miss Franklin is a pioneer in social service in connection with the work of children's hospitals and dispensaries. She started this work at Bellevue and Roosevelt hospitals, New York city, and was one of the first nurses with the New York Society for Improving the Condition of the Poor. Miss Franklin has done considerable work in the Southwest, particularly in El Paso, where she organized the city and county department of child hygiene. The Children's Hospital at Los Angeles, which was described in an earlier number of this journal, has accommodations for 115 bed patients.

# QUERIES AND ANSWERS

### Some Private Hospital Problems

To the Editor of THE MODERN HOSPITAL:

I desire some information, and will briefly state the conditions in our town in order that you may the better understand.

About a year and a half ago I came here and opened up a small hospital in an old frame building. I opened it as a private institution and, of course, furnished it myself. The work has proved very satisfactory in amount, but I believe would be more if I had a modern building, as this one has outgrown its usefulness. It is not convenient, and it can never be made so; this means more work for the nurses, and as a result I am unable to keep the grade of trained nurses I desire. It is difficult to keep the building warm in the winter and cool in the summer time. This is a small town of 1,500 to 2,000 people, but there is a very large population surrounding it—quite 15,000 to 18,000 people. The nearest hospital is fifty-five or sixty miles, and that one a small private institution. The people here are not educated up to the benefits of a hospital, but they have offered to raise $8,000 if I will raise an additional $8,000 for a new plant.

Now, what I would like to know is this: can I afford to pay in one-third in order to have a new hospital? The new building would have ten or twelve beds. I would have to furnish it and maintain it as a private hospital, and pay so much per month rent, and with this rental money the people would pay the taxes and insurance.

W. M. T.

Your problem is an extremely difficult one unless one had more information than your letter supplies. A good deal would depend on the support that such a hospital would have. Would the physicians of the community and in the surrounding country send patients there if you had the new hospital? And even if you could answer this question in the affirmative, there would still be the question of how much your patients could afford to pay for accommodation—that is, what would the per capita cost have to be in order to meet the financial limitations of your clientele? You will know better than anyone else what it is going to cost to feed your people, and, since you have now been running a hospital in that locality for a year and a half, you will have a pretty clear line on what the doctors in that community require. For instance, if they demand pathological work, which they have a right to demand, then you would have to find a pathologist. Whether you can get a satisfactory man and what his services will cost, you will have to ascertain; and so with the x-ray department and physical therapy. If the demands are going to be great in these scientific departments, you will have to get a proportionately greater amount of money from your patients, and the question is, can the class of people that you will attract to the hospital afford a sufficient amount to pay for such accommodations. It seems to us that pretty nearly all of your problem is capable of analysis, using your past experience as a basis. Of course, you can say pretty definitely that if you have a new hospital and can give good medical and surgical service to patients, a larger number of patients will use the hospital, especially well-to-do people, and so gradually you will be able to educate your community up to the hospital ideal.

Our judgment is that you had better think about a good deal larger hospital than 10 or 12 beds, and plan your institution so that the first unit will accommodate 10 or 12 patients and the necessary number of nurses, and perhaps some of the women help, which will reduce the expenses somewhat; then, as your institution becomes crowded, you can build another unit and a third unit eventually. The margin of profit would be quite small in a 10- or 12-bed hospital; so small, indeed, after your fixed charges or overhead expenses are met, that you would not be able to reserve very much money for the scientific care of your patients. Suppose, for instance, you could get an average of $20 a week for 10 patients; that is only $800 per month, and, after you have paid your rent, the salaries, your food bills, and for all necessary supplies, you would not have very much left. But if you had 20 beds, your overhead expenses would hardly be any larger, and the only extra items you would have would be a small amount of food and perhaps a very small amount more for the salaries of a few extra people.

In your section of the country you ought to build the first unit of a small hospital for about $1,000 per bed, and then you ought to reserve about $100 per bed for equipment. If absolutely necessary, you can lower these figures, or at least delay the installation of some things that can be put in later on. Perhaps you will know better than we what your per capita cost of maintenance will be, but under average conditions in this country $1.50 per day per patient ought to see you through. We think that if you will take some of these suggestions and work them out in figures you should be able to come to some conclusions as to what you should do. In the event that you determine to go ahead, if THE MODERN HOSPITAL can be of further service by making you some rough sketches for submission to your architect, you may command its services freely.

### Disinfection of Laundry Goods

To the Editor of THE MODERN HOSPITAL:

We have completed in our county a hospital for tuberculosis, with an accommodation of 53 beds. We are having some little difficulty over the care of the clothing from the beds, etc., of patients. We have an up-to-date laundry plant, but find it difficult to secure help; in fact, we cannot get help to work in the laundry. We have been advised so much about the different methods of disinfection that we find it difficult to come to a conclusion as to what should be done. Can you direct us to any articles dealing with the disinfection of clothing—that is, bed clothing—and the most thoroughly up-to-date and standard plant for that purpose?

COUNTY SECRETARY,
St. Johns, New Brunswick.

It seems almost unanimously conceded that the best way to disinfect bed clothing of tuberculosis or other infected cases is to use the so-called high-pressure washer. This washing machine is usually rather small in size, built of metal strongly reinforced, carefully gasketed or fitted with ground casting joints, and capable of sustaining a considerable amount of steam pressure. Usually this disinfector is placed in the wall between the soiled clothes room and the laundry proper. The technic is to have the linen man carry the infected goods to the soiled clothes room in canvas bags. The worker in this room exercises due care in emptying the linens out of the bag and in placing them and the bag in the washer. The machine is then closed, and the hot water and steam are let in and the machine is set in motion. Under the high-pressure steam the water is quickly brought to a boiling point and

is kept there for ten or fifteen minutes. The washer is then stopped, with the opening facing the laundry room on the other side of the wall from the soiled linens. The goods are then taken out and are washed in the large washer in the same way that other soiled linens are cared for. This machine is not expensive, and is made and sold by the large laundry machinery companies.

Some small tuberculosis hospitals that are too small to equip themselves in the above way employ a very primitive process, but one that is quite efficient. They use a bath tub with a 3- to 5-percent carbolic acid solution and soak the infected materials for five or six hours or over night. Instead of the carbolic acid a solution made up of one pound of 40-percent formaldehyd to forty gallons of water would answer the same purpose. The odor of the carbolic acid is disagreeable in the clothing, and it is difficult to take it out in the subsequent washing, although some laundrymen claim that they can remove the odor entirely by the use of a small amount of oxalic acid. It is our experience that this method is not satisfactory.

Any of the above methods will destroy the tubercle bacilli or any of the nonspore-forming microorganisms. These methods could not be counted on to destroy anthrax or tetanus or the gas bacillus; but generally we do not attempt to sterilize against these microorganisms in our every-day hospital practice except in the operating room. Certainly it would be unnecessary to think about nonspore-formers in a tuberculosis hospital.

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### The Annual Report

To the Editor of THE MODERN HOSPITAL:

We are having some trouble about reaching an agreement as to what our annual report should include. Will THE MODERN HOSPITAL kindly tell us what the ideal report should cover, and can you send us an annual report of the hospital that you think comes nearest to your ideal?

J. C. W.

What would be an ideal report for a large, richly endowed hospital would be a miserable failure for a small, struggling institution, and any report that we might send you would be misleading because it would be predicated on conditions so different from those present in your institution that it would not only be of no service to you, but might do you a good deal of mischief. It just happens that we know your hospital to be about a 50-bed institution, without any very substantial endowment, and we assume that your money for maintenance comes to you in the form of subscriptions annually and in earnings from pay patients. We think the first thing for you to do is to determine the purpose for which you intend to use the report. Annual reports are of three kinds. The first kind is merely a statement of the finances of the institution for the information of those interested in its finances. This form of publication need be issued in only very small numbers, and should deal almost exclusively in the finances of the institution, including the amount of work which has been done during the time covered by the report, the cost of that work and perhaps an estimate as to the cost of the work intended to be done during the next year. The second kind of report that hospitals issue is a purely medical or surgical report. This report covers the number of cases of various diseases—using, for instance, the Bellevue Hospital nomenclature—gives the number of cases of each disease treated, states what was done, and how the case came out. This is a purely medical report, intended to be of benefit to the medical staff of the hospital and the staffs of other hospitals, and is only got out by hospitals that can afford the privilege of issuing a purely instructive piece of literature. This sort of report is usually issued in comparatively small numbers. The third form of report is a piece of pure publicity, and should be issued frankly with the intention to attract money to the institution. This is really the only sort of report that a struggling hospital can afford to get out, and it seems to us that the greater struggle the hospital is having to finance itself the more necessary is it to get out such a report as this. This report should be really a story of hopes and ambitions of the institution. It should give the number of patients that the hospital has cared for during the period for which the report is issued, in general terms the character of the illness from which they suffered—that is, so many medical and so many surgical cases, so many children, so many births and so many deaths. The report should give the average number of days' stay in the hospital for the patients, the per capita cost of the patients, with a frank statement as to what this per capita cost includes, and these costs ought to be distributed to a certain extent—that is, so much for raw food, so much for insurance, so much for the pharmacy, the x-ray department, the pathological laboratory, etc. This report should also tell what improvements have been made in the hospital during the period, why they were made, and in what they resulted, and it should state what improvements are contemplated in the future and what they will probably cost and the necessity for them. Everything in this report should be in the form of information to a prospective donor of funds on which he may base his future conduct toward the institution. There is a great difference of opinion as to whether this report ought to dwell on financial economies that have been made during the period or on the amount of service given to patients. Most of us in the hospital field are beginning to look with great suspicion on the hospital that has a low per capita cost, but we always want to know what a high per capita cost includes, and the lay public is beginning to feel just the same way about hospital expenditures. People with sense enough to have money to give away know perfectly well that hospitals must pay for service to their patients, and that a high per capita cost may mean good pathological work, good x-ray work, a scientific dietary, plenty of nurses, and the other things that go to make up good hospital care. Most people know also that many hospitals waste their funds, and that, while they have a very high per capita cost, they give their patients practically nothing except boarding-house care. This report ought to make very clear what the patients have had in the way of service. Photographs serve to catch the attention of those whom it is desired to interest, and a well-written story should carry the reader over the dull figures. A personal experience or the story of some pathetic or amusing incident occasionally will brighten the text of the report, and a story of the hopes and ambitions of the superintendent, with a hint or two as to some specific thing greatly needed, with a statement as to what it will cost, has many times brought the required funds.

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### Ventilation—Location of Toilets

To the Editor of THE MODERN HOSPITAL:

Our hospital is contemplating the erection of a wing, and the plans are pretty well under way. Some of us are not agreed on some points that the architect has settled in his own mind, and one of these concerns ventilation. The plan was for the installation of a suction fan system to be placed on top of the new wing. Have these types of ventilation proved satisfactory in recent hospital construction? We so commonly find that the artificial ventilation

of large hospitals is unsatisfactory, either because of the complexity of the ventilation plant or because it is not manned by individuals who understand the needs. If I am not mistaken, several of the recent hospitals have done away with artificial ventilation entirely. We would like to know whether this is recognized as proper hospital construction.

Another matter which has come up for discussion is the arrangement of the lavatory in respect to a small ward system. It is intended to put in small wards of seven beds each, with adjoining toilet. Is the arrangement suggested

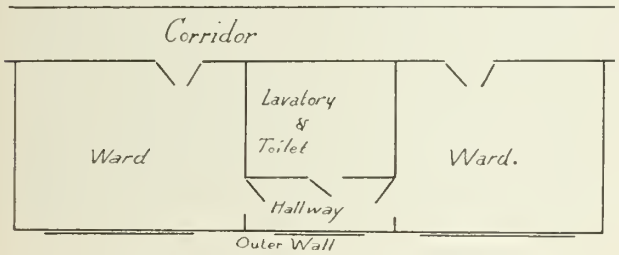


Diagram of arrangement of wards and lavatory.

by the accompanying sketch good hospital architecture, where two small wards would each have access to the same lavatory? The short hallway which connects the ward with the toilet would always have natural fresh air ventilation by its window, while the toilet itself would probably have its own ventilation by a flue. Any suggestions you can offer will be greatly appreciated.

INQUIRER.

Theoretically, mechanical ventilation is a tremendous success, and every architect in the country and almost every mechanical engineer can show you conclusively that mechanical ventilation cannot fail, and yet, so far as we know, there is not a single hospital in this country, new or old, that has an efficient, workable mechanical ventilation system in actual operation. It seems to us, as the result of ten years of close study and the running down of every successful plant that we have heard about, that mechanical ventilation for hospitals is not a success today in actual practice; it seems also that all of the requirements of ventilation will have been met if we have window access to fresh air, with transoms over the doors of all rooms and wards, so that fresh air will have easy traveling from the outside into and out of the corridors, and if we have a roof fan with exhaust from the service rooms only, such as toilets and baths, utility rooms, and the small food service rooms on the various floors. The large kitchen should have its own individual exhaust, with a sufficiently large fan to develop a current into the air shaft, so that the smells of foods will not permeate the house. Wards and rooms occupied by patients can be thoroughly ventilated by windows if there are transoms over the doors. Any one of a dozen window devices will prevent the air from blowing in directly on patients.

The sketch you sent is not the best treatment of the lavatory and toilet situated between two wards. Theoretically, your toilet will have its own ventilation by a flue. As a matter of fact, it usually does not have such ventilation, and, if so, the ventilation very frequently does not operate. The best way to do is to have the toilet and lavatory on the other side, next to the outside windows, and the small hallway opposite and running parallel with the large corridor. In this way your toilets will get direct window ventilation. The hallway can be easily lighted by Florentine or similar glass partitions on either side, preferably on the side toward the lavatory, and the light from the outside windows.

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A hospital movement has been launched at Clintonville, Wis.

## NEW SYSTEM OF LABORATORY MARKINGS

### A Note on the Method Employed for the Records in the Chicago Municipal Tuberculosis Sanatorium

Consistent with speed and saving of space in marking laboratory record sheets in a tuberculosis sanatorium where consecutive semi-monthly or monthly examinations of the excreta of every patient are made, some modification of the ordinary marking system used in general hospitals was found necessary. The methods herein described have been in use since the opening of the Municipal Tuberculosis Sanatorium of the city of Chicago, and have been highly satisfactory.

In marking the reaction of urine, use was made of the signs employed in chemistry in designating the ions—i. e., $\overset{+}{H}\text{-OH}\overset{-}{}$—this resulting in much more concise figures than the use of the words acid and alkaline. For instance, if the urine is acid, it is simply marked after reaction with a plus sign (+); if alkaline, with a minus (—); and if amphoteric, a plus-minus combination $\overset{(+)}{(-)}$ is used.

Under the heading "tubercle bacilli" a number of important points are sought for, which, unless designated in concise signs, would require a great deal of space. The Gaffky original or modified tables might be considered, but, on account of their complexity and necessity for reference to a chart, were discarded for the following method:

The plus (+) and minus (—) marks were used to designate, respectively, the presence or absence of tubercle bacilli. If positive, the approximate number of bacilli per field were noted in the upper right-hand quadrant. If, however, tubercle bacilli were found only in the entire smear, then the number in the upper right-hand quadrant was simply followed by the letter "s," to designate slide or entire smear. When the number per field was so numerous that, for practical purposes, too much time would be consumed counting them, the number was designated by the infinity sign ($\infty$), taken from mathematical marking. When the smear had been made after antiformin sedimentation, the above figures were superseded by a capital "A," absence of this indicating the findings were by direct smear. Following these figures is given a brief description of the types of bacilli, thus: "+ 15 S A, long, beaded," indicates that the sputum is positive for tubercle bacilli, fifteen to a smear, prepared by antiformin sedimentation, and that these bacilli are long and beaded rods.

In designating the relative number of different types of cells and bacteria in the sputum, and cells and casts in the urine, the following dot system was used: relatively few, one dot (.); moderately numerous, two dots in a perpendicular (:); numerous, three dots in a triangle (.·.); and practically innumerable, by the infinity sign ($\infty$). For example, under cells in the sputum, "Mono .·. Polys : Endo." indicates the presence of a great number of mononuclear leucocytes, moderate number of polymorphonuclear leucocytes, and a few endothelial leucocytes.

H. J. CORPER, M. D., Director.

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A 42-room hospital, occupying the entire top floor, is to be a feature of a five-story fireproof building to be erected in Butte, Mont., by Dr. T. J. Murray, of that city, at a cost of $300,000. The first floor of the structure will be designed for stores and business offices. The second, third, and fourth floors will be devoted largely to offices for doctors and lawyers. Dr. Murray will spend about $15,000 in fitting up law and medical libraries for the building. A roof garden will be provided in connection with the hospital.

## MEDICAL EXAMINATIONS GROWING POPULAR

### The People Everywhere Beginning to Appreciate the Value of an Occasional "Going Over"—A Form of History

The question of medical examinations of industrial workers and of various classes of well people seems to be meeting with the greatest encouragement all over the country. New York recently set aside a medical examination day, and public announcement was made that the health department officers would examine people without expense. Those who were able to pay were strongly advised to go to their family physician and undergo a careful examination to show that they were in good health.

Similar examinations have been held in many places, Chicago, Kansas City, St. Louis, Boston, Philadelphia, and Pittsburgh more notably.

Inquiry has been made for a uniform examination card that can be used for this purpose. Appended is the card used by the health department of the city of New York which seems to have been found satisfactory:

PAST HISTORY

Name Age Sex M. S. W. Title

Address Weight { Average / Present Height Ft. In.

Family history

Give year of diseases { Typhoid fever / Rheumatic fever Pneumonia Pleurisy Scarlet fever Diphtheria Other diseases Give year

Accidents (give yr.) Operations (give yr.) Vaccinations { Typhoid / Smallpox

Appetite Digestion Sleep Other Functions Habits { Tobacco / Alcohol Headaches

PRESENT CONDITION

Eyesight R. L. Eye reflexes Hearing R. L. Teeth

Throat and nose

Heart { Give size / Murmurs and rhythm apex

Pulse { Rest / Exercise Blood pr. Sys. Dias.

Lungs

Abdominal organs Knee jerks

Diagram of the chest

Urine S.Gr. Alb. Sug. Microsc. Blood examinations Hemoglobin ind.

Other examinations Examined . 19 By M. D.

Uniform examination card, reduced size.

Two opinions relative to insurance in the workmen's compensation system in force in Pennsylvania have recently been rendered by the state attorney general's office. One of the opinions holds that state hospitals and similar state institutions receiving separate appropriations must insure their employees out of their own funds and cannot have the cost of such liability insurance taken out of the appropriation of $15,000 made for state employees under the compensation act. The other opinion holds that the state treasurer is custodian of the compensation insurance funds, and receipts issued by him for payment made for the use of the fund do not have to be countersigned by the auditor general; that bonds shall be made to him as state treasurer, and not to the commonwealth, and that the treasurer may designate the depositories for the fund from the list of banks approved for deposit of state moneys.

Dr. L. Vernon Briggs, of the Massachusetts State Board of Insanity, in a recent address before a committee of the state Legislature said that many patients are committed to the state hospitals for the insane when they are really not insane. Dr. Briggs was speaking in favor of a bill which would allow the physicians of the psychopathic department of the Boston State Hospital to sign the commitment papers of insane patients, but would give them no fee for so doing. The existing law provides fees for physicians who sign such papers.

## GOAT'S MILK TO GET TEST

### Government Herd of Milch Goats Is Loaned to Sea View Hospital for Series of Experiments—What Has Already Been Done

After more or less useless discussion for the past few years, the question of the value of goat's milk for the feeding of tuberculosis patients is about to be pretty clearly developed by a series of experiments that are to be inaugurated at Sea View Hospital, New York. The department of Agriculture of the government has loaned to Sea View Hospital twenty-six milch goats, most of them of the Saanen and Toggenberg breeds. This herd of goats is expected to take care of 125 children, and the tests are to be under Dr. E. S. McSweeney, medical director of the hospital, who has arranged for the cooperation of the New York City Health Department Research Laboratory. It is expected that some pretty definite results can be tabulated in the course of these experiments.

It has been known for a long time that goats were peculiarly immune to tuberculosis, and it is not known that the disease has ever attacked a milch goat, nor have the bacilli of tuberculosis ever been found in the milk of these animals; but whether goat's milk carries with it any protection against tuberculosis, or any value not contained in other milk, has never been determined.

It is a peculiar fact that, although goat's milk has been known for many years as almost a specific in summer diseases of infants, the hospitals of this country have not made use of this knowledge and, except in one instance, have not paid special attention to the feeding of sick children on goat's milk.

Some five or six years ago Michael Reese Hospital in Chicago did a considerable amount of work in this field. The hospital purchased twenty of the ordinary, so-called "alley" goats, and at the same time purchased an imported Nubian buck. The females were purchased when they had new-born kids at their side, and were picked up here and there. The herd was kept at the hospital, and it was an interesting sight to see the goats feeding on the lawn about the big canopy tent erected for the children. Every once in a while an orderly would take a bottle and call one of the goats, and milk a sufficient quantity for one child. The milk was fed warm, and nearly all the children did amazingly well under the treatment. A child suffering from the gastrointestinal summer diseases seemed never too far gone to react immediately under the goat's milk and get well rapidly, although sometimes the milk had to be diluted even as much as four or five parts water to one of milk and the strength gradually increased.

But the Michael Reese Hospital is on a city lot, and it is not an easy thing to handle goats under such circumstances, especially so large a number, and it became necessary eventually for the board of trustees to give up the goat herd.

The herd was not dissipated, however, but was transferred to O. H. Gillespie & Son, Madison, Neb. The illustrations shown herewith are of this herd of goats and their descendants. As will be seen, the buck stands almost as tall as a Jersey cow in the illustration (Fig. 1). The

females shown in the other photographs are grade Nubian goats, but Mr. Gillespie is building up a herd of fine milkers, and is doing a great amount of good in Nebraska and surrounding territory. As the legend under one of the

Fig. 1. Rameses II. and his friend. The cows seldom bother the goats, and it is a common sight to see the kids sleeping close around and on top of the cow when she is lying down, which the kids do to keep warm.

cuts indicates, he sends them into other states to save sick babies. The white female shown in the illustration was one of the earlier crosses of a common white goat and Rameses II., the big buck in the picture. She and her first

Fig. 2. Honey and her six-weeks-old snow white kids. She is half Nubian and half Saanen. Gives six pounds of milk per day, and has been three times over into the state of Iowa to nurse sick babies.

two kids were shown at the first Chicago Baby Welfare Convention in 1910, and she was then giving twelve pints of milk daily, or a gallon and a half.

During the time that the goat herd was kept at the Michael Reese Hospital, Dr. J. W. Jobling, the pathologist,

Fig. 3. This grade Nubian doe gave birth to her first kid when she was twenty months old, and gave nine pounds of milk per day, with a gradual decrease until dry, twenty-two months later.

did some work with the milk, and he found that almost uniformly goat's milk runs about 6 percent butter fat, and the fat globule is so infinitely small that it was impossible to obtain the cream until the milk had been boiled. Those who have given the matter a good deal of thought contend that the reason why goat's milk agrees with sick children is because of the small size of the butter fat globule; and authorities say that the goat's milk ranks third in the smallness of the butter fat globule; mother's milk has the smallest globule of all, then comes mare's milk or ass'

Fig. 4. Jane, half Nubian, and her six-weeks-old babies.

milk, then goat's milk, and then the various breeds of cows, beginning with the so-called "thin-milk" cows, like the Ayrshire and Holstein, up through the Devon, Shorthorn, and Jersey. It has been stated that the butter fat globule of the Jersey cow is so large that cows of this breed have difficulty in raising their own calves because of gastrointestinal disturbances due to the large size of the butter fat globule.

The experiments to be made at Sea View Hospital with goat's milk should be of general interest, and it is to be hoped that the public will have the benefits of the results from time to time as the work proceeds.

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The Hamot Hospital, Erie, Pa., has a new 20-bed children's department. The department consists of a ward for infants, a ward for children from two to twelve years of age, an open-air ward, a play room for convalescents, a bath room, a diet kitchen, and large closets. All of the wards are beautifully decorated, the walls of the indoor wards being in a deep fawn color, soft and restful to the eyes, with the ceilings in a rich cream. The walls of the open-air ward are finished in soft green, with the ceiling in a lighter shade. A wide gold band separates the frieze from the tinting on the side walls. The open-air ward is fitted with windows that permit of any part or the whole of two sides of the ward being thrown open. Indirect lighting is employed. All furniture is white enameled. The beds are provided with sliding sides, and are of a height which does not require the nurses or doctors to stoop while attending the little patients. The bath tubs also are raised.

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The New York City Department of Charities plans a general reorganization of the city hospital staffs. In all hospitals where the staffs are large and unwieldy, small staffs will be substituted and the doctors will receive a fixed salary. Each staff will be divided into four departments, and the chief of each department will be directly responsible for his men. The plan is similar to one which has been in force at the Johns Hopkins Hospital for the last year and which is being tried out at other institutions. While not directly under the Department of Charities, Bellevue and allied hospitals will also adopt the plan, it is said, although legislation will be necessary, as the city charter prohibits a physician attending at Bellevue to charge a fee.

# HINTS FOR HOSPITAL SUPERINTENDENTS

This column is maintained as a help and reminder to hospital workers about the little things in administration. It is urgently requested that everyone contribute his and her "hints." Each item added to our knowledge helps to fill the common storehouse from which all may draw supplies.

This is a good time to think about your fire protection—indeed, any time is a good time to be on the job about fire protection. It will be everlastingly too late when you have a fire and lose a lot of patients. And it will not do to try to excuse yourself by putting the blame on your board; you are the trained person in the hospital, and the public as well as your own conscience will hold you responsible if you have a fire. Sometimes a dollar or two in recharged chemical extinguishers, or an hour or so in straightening out some little fire hazard in the service room or kitchen, will be all that is necessary.

Don't get the notion that you have to send for an expert every time you want some little thing. There are very few mysteries in mechanics, and nine times out of ten the man you send for won't know half as much about the job you want done as you do. Better study it out yourself, determine just what you want to accomplish and how, then send for your engineer or the person around the establishment who usually does the odd jobs. If you have overlooked some difficulty, your mechanic will call your attention to it, because most people in this world would rather find an excuse than a way.

Too many institutions are finicky about the kind of cases they take. Hospitals are refuges to which sick people may go in the hope that they will be taken in and that there will be proper treatment to get them well again. Sick people do not choose the disease from which they suffer, and generally when they approach a hospital they do not know what is the matter with them. If, when they arrive at the institution and are looked over by a young medical man, it is found that they have any one of half a dozen so-called infectious or contagious diseases, they are refused admission.

This is all wrong, and the kind of hospital that picks and chooses its cases ought to be out of business; either its policy is too narrow and its administrators and supporters are too selfish, or it has not the means to permit it to give a proper hospital service to the community, and it ought to be closed up. The hospital that cannot accept a sick person because of any particular disease has no right to exist in this modern day; any hospital is liable to be overcrowded and almost any hospital can be crowded in some one or another department, but it is inconceivable that any acute disease hospital should turn away any acute disease for any other reason.

Why does not some able and enthusiastic hospital pathologist devise a scheme in the way of a technic for successful handling of gonorrheal vaginitis of children? Every once in a while an epidemic of this disease breaks out somewhere, and the hospital falls back on the excuse that no method has been devised for preventing the spread of this disease once it gains a foothold in a hospital.

There are many sources of infection of gonorrheal vaginitis, and it is true that it is one of the worst of all diseases to properly control, but it can be done, and it is the business of the hospital pathologist to devise a scheme for doing it.

Some years ago there was an epidemic of this disease in a certain very large hospital with a children's service of about 75 beds; there was a pretty active superintendent in the hospital and a very active medical staff in the children's service; there was an excellent and active pathologist. Everybody tried his and her level best to stop the spread of the disease from the very day that it commenced, and yet there was not one single female child under three years of age in that hospital that did not get the disease before the epidemic ran its course. Certain little insignificant indications pointed to a probable common source of the infection, but for a long time this source could not be ascertained. Presently someone thought about the vaseline jars that were used to oil the rectal thermometers. The pathologist looked into these jars and found every one of them a breeding place for gonococcus. This technic was all changed and the epidemic subsided.

We are hearing a lot these days about efficiency experts and business systems in our hospitals. It seems to us we are being taken clear off of our feet by these efficiency fellows. We have not seen a single "efficiency" report up to date that was worth the paper on which it was written, and certainly we have not seen one that was worth the money it was costing, because these efficiency engineers make their analyses entirely in terms of dollars and cents, and all their reports are comparable to similar reports that come out of manufacturing institutions that are conducted for money profit. These business efficiency experts do not know the product that is turned out of the modern hospital, and they fail to give it a place in their column of figures. The product turned out of the modern hospital is health, and the only money connection that can be figured out of health is the capacity of the patient to go back home and earn a living. Once in a while a business efficiency expert recognizes this new earning power on the part of the hospital patient, but that also is dollars and cents.

Even some of our very best surgeons have been converted over to the idea of thinking in terms of moments and seconds in a surgical operation. They listen with intense interest to the business efficiency expert who tells them that they can go through the peritoneum down on the appendix in sixteen movements, and this efficiency expert gives explicit directions as to just what these motions shall be. Not very long ago one of these gentlemen made the statement before an audience of more than a thousand leading surgeons in this country that every surgeon ought to know exactly what he was going to do in his operation and he ought to have predetermined exactly how he was going to do it, where he was going to stop, and how many motions it was going to take. The hospital people have had to listen to a lot of nonsense, and the physicians of this country as well, but it seems to us that this piece of advice from a man who probably had never seen a surgical operation, and who certainly had never performed one, was the last vibration in absurdity.

Better fight shy of business experts who have come out of a factory run for money and who are proposed as experts to make a "survey" in your institution.

# THE MODERN HOSPITAL

*A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services*

Vol. VI *April, 1916* No. 4


## NEW COLUMBIA HOSPITAL FOR WOMEN AND LYING-IN ASYLUM

### The New Home of Notable Washington City Institution Embodies Latest Standards of Construction and Equipment—Of Low Cost, Considering High Character of Material—Some Details and Figures of Cost


By MECHLIN & STARR, Architectural Engineers, Washington, D. C.


IN the spring of 1913 it was determined to build a modern fireproof hospital building to replace the present main building of the Columbia Hospital for Women and Lying-In Asylum at Washington, D. C., the construction to be under the direction and supervision of Elliott Woods, superintendent United States capitol building and grounds. In accordance with this conclusion, plans were prepared by Nathan C. Wyeth, architect, the engineering features and mechanical equipment being designed by the authors.

The proposed building was to be devoted entirely to maternity cases and to the treatment of diseases peculiar to women. It was to accommodate approximately 130 patients, as well as administration and service portions, which would be of sufficient capacity to permit future additions of such size as to double the number of patients. The contemplated building was to have two distinct divisions, gynecological and obstetrical, and each service was to provide for both free and pay patients, as well as have separate quarters for white and colored patients. Provision was also to be made for a complete dispensary, but separate from the main service of the hospital. The building was to be heated by its own plant, but electric current was to be purchased.

It was found feasible, by moving a few small wooden structures to the rear, to locate the new building on the center of the lot without interfering with the operation of the present plant, and to face the building to the south, the desirable exposure. The design finally selected shows the main portion of the building a rectangle 176 feet long by 44 feet wide, running east and west, with Y-shaped wings at each end of the front, each wing being 31 by 42 feet. A glance at the elevation will show that the surface of the lot was above the sidewalk level, the terrace ranging from 3 to 10 feet. The building is so located, however, that patients can be received directly at the first floor level on the west, while at the same time a separate dispensary entrance is provided at street level on the east. By providing areaways and gently sloping banks away from them, ample light is obtained in the basement rooms.

The accompanying plans will best describe the arrangement of rooms. In the east wing of the basement is the dispensary department, where are also the hospital pharmacy and engineer's quarters. In the center of the basement are the boiler and machinery rooms, main switchboard, and laundry, while at the west are servants' rooms, records, patients' clothing, and autopsy and disinfecting rooms. Separate entrance is provided near the service elevator for tradesmen and employees.

In general, the east wing of the building is devoted to obstetrical service and the west to gynecological. The first floor is for colored free patients, the second for white free, while the third is for private patients. The fourth floor contains the operating and delivery suites, and the fifth the kitchens and dining rooms. With separate elevators and stairways at each end of the building, this arrangement gives the desired relation of departments.

The wards are of 8-, 4-, and 2-bed capacity—that is, comparatively small rather than large. The main 8-bed wards are, however, located in pairs in

the form of a Y, thus insuring a maximum amount of sunlight, with a central location for the attending nurse. Each wing is provided with a quiet or isolation room for extreme cases, as well as a 2- or 4-bed ward, and the necessary utility, toilet, and linen rooms and serving pantry. A room for examinations and cystoscopic work is also provided on each ward floor. On the obstetrical side, on each of the first, second, and third floors, is a large nursery and a baby's bath.

The administration rooms, consisting of offices, information booth, and reception, consultation, board of directors', and medical staff's rooms, are centrally located near the front entrance. The wings of the second floor are practically a duplicate of the first floor. In the center are the resident staff and x-ray suites. On the private room floor are the office, living quarters, and supply room of the superintendent of nurses, and also a retiring room for special nurses.

The fourth floor is the operating floor of the hospital, being divided into the maternity and surgical services. The former consists of three delivery rooms, separated by sterilizing room and obstetricians' washup. There are also connected with this service a 4-bed ward for first stages of labor, an obstetricians' waiting room, and nurses' washup.

Fig. 1. Columbia Hospital for Women and Lying-in Asylum. General view. South elevation.

The surgical portion of this floor consists of a comparatively large operating room and a smaller one, with a sterilizing room between the two. Directly across the corridor is the anesthetizing room, with the nurses' washup on one side, and head operating nurse's office and supply room, and surgeons' washup and waiting rooms on the other. Of special interest in connection with the surgical suite are two 4-bed and one single-bed recovery rooms, which are separated from each other and the nurse's station by glass partitions.

The fifth floor is given up to the kitchens and dining rooms. The main kitchen serves all dining rooms on the same floor and all pantries on lower floors by means of electric dumbwaiters, except the third floor private room pantry, which is served by dumbwaiters from the special diet kitchen. On the roof is the air washing and fan room and the roof garden.

The construction of the building is fireproof, being of steel frame, with terra cotta floors and partitions and brick walls. Besides elevators at each end, there are separate fireproof stairways. The exterior is of tapestry brick, with limestone trimmings. The architectural features of the exterior are an outgrowth of the plan rather than any attempt at ornamental treatment. The elevation is simple in design and interesting in detail, the brick being a golden color, with the plain surfaces broken by patternwork. An added touch of color is given by polychrome terra cotta inserts over the fifth floor windows, while the warm brown-colored roof tile and the Italian treatment of the roof garden as a loggia add much to the interest of the elevation.

The interior trim of the building is wood in general, chestnut where finished natural and birch where painted, but flush metal trim is used in wards, utility rooms, operating and delivery suites, and stairways. The plaster walls in general are painted in a warm gray-green color, the entire operating floor and the toilet and utility rooms throughout being painted white enamel over cotton. The floors of all wards and private rooms are of heavy battleship linoleum, while the operating, delivery, utility, and toilet rooms are tile, and the corridors are terrazzo. With linoleum floor the coved bases are of Keene cement, with tile floor they are of tile, and with terrazzo floor they are homogeneous with the floor, but everywhere the bases are coved and flush with both the finished plaster and floor. In general, sharp angles and dirt ledges are avoided as much as possible in the detail of the interior finish.

The building is heated by a one-pipe up-feed low-pressure steam system, with air removal. Two 137-horse-power all-steel water tube boilers furnish steam for the building, being run at seventy pounds pressure for sterilizers, reduced to twenty pounds for the laundry and kitchen and five pounds for heating.

In general, the radiators are exposed, of plain pattern, with wide spaces between sections, thus increasing not only the efficiency of the radiators, but the facility of cleaning. Radiators are hand controlled, except in rooms where forced ventilation is provided, and there they are thermostatically controlled. In the main operating room, however, the method of hot panel heating is em-

ployed, radiators being placed behind certain panels of the marble wainscoting, thereby making the marble the heat medium. By this method the difficulty of keeping exposed radiators clean is obviated. This source of heat is designed to maintain a temperature in the room of 75 degrees and is under thermostatic control, the thermostat being in the operating room. In order to maintain an operating temperature of 85 degrees, ventilating air is introduced

Fig. 2.

Fig. 3.

in the rooms supplied. A considerable range of relative humidity is obtainable with this apparatus, but the author's investigation would seem to indicate that a relatively high percentage of moisture in operating and anesthetic rooms is desirable. The supply and exhaust fans and air washer into the room at a temperature of 90 to 95 degrees. The vitiated air of the room is, in turn, exhausted by fan. The fresh air for the operating, anesthetizing and delivery rooms is taken in at the northwest corner of the roof and forced by a multiblade fan through tempering coils, washer, and reheater located in the pent-house on the roof. This apparatus is under complete thermostatic control, so designed as to maintain a high percentage of moisture

Fig. 4.

Columbia Hospital for Women and Lying-in Asylum. Fig. 2, section of 8-bed ward, showing typical ward equipment. Fig. 3, main operating room; note ceiling lights and marble wainscoting on the right used as hot panels, and also flush metal doors and trim. Fig. 4, nurses' office between 8-bed wards, showing how nurse can see into both wards.

Fig. 5

are started and stopped by remote control push-button switches located in the head operating nurse's office.

Fans exhaust the air from all toilet and utility rooms and kitchens, while wards are cross ventilated through transoms. Every room and corridor in the building has outside windows. The autopsy room is ventilated downward through the pedestal of the autopsy table and exhausted through a duct by a fan into the stack.

The water supply for the building is taken from either the high- or low-pressure city distribution system. The low-pressure system is boosted by a centrifugal pump, with automatic starter and pressure regulator, intended for use only in case of a breakdown of the high-pressure service. The hot water supply is obtained from a heater located in the boiler room, heated by live steam under thermostatic control, which thermostat maintains a temperature of 180 degrees. There is also connected to this heater an incinerator, by which means any heat generated by the destruction of waste is utilized in heating the water.

Fig. 6.

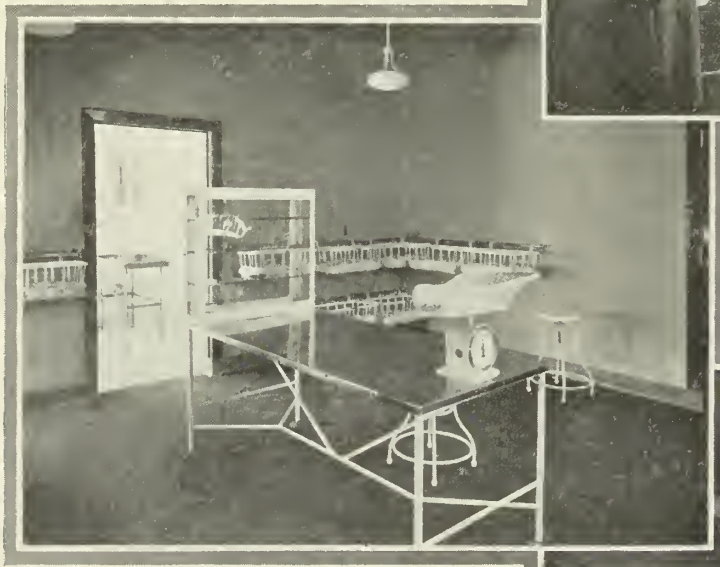


Fig. 7.

Fig. 8.

Columbia Hospital for Women and Lying-in Asylum. Fig. 5, main kitchen; note convenient grouping of kitchen accessories. Fig. 6, recovery rooms off operating rooms; note glass partitions. Fig. 7, typical nursery; note special babies' bath in adjoining bath room. Fig. 8, autopsy room; note distribution of light fixtures; room is ventilated downward through table pedestal.

The hot water distribution system is what is known as the down-feed circulating, the main supply being carried at once to the roof space, where it is distributed, the system being so designed that hot water can be obtained from any fixture in the building practically instantaneously.

The entire plumbing system was designed with a view to permanency and simplicity, all concealed piping being wrought-iron and exposed piping nickel-plated brass, there being no lead pipe or connections whatever. In the selection and design of the fixtures and brasswork, most of which was specially designed for this building, particular attention was given to the ease with which the fixtures could be kept clean and their durability. The exterior of all brasswork was made particularly smooth, eliminating as far as possible all sharp edges and corners where dirt might collect. A few special features which may be mentioned in this connection are: stop valves were provided for all fixtures, with smooth bonnets similar to those on the faucets; all bath tubs have standing, removable celluloid wastes, which can be easily cleaned, and also prevent the washing back into the tub of any dirt from concealed piping, which is possible with combination waste and overflow; in the surgeons' lavatory the waste is cast integral with the lavatory, and is large enough to be easily wiped out by removing the perforated china cover; all fixtures are equipped with a special

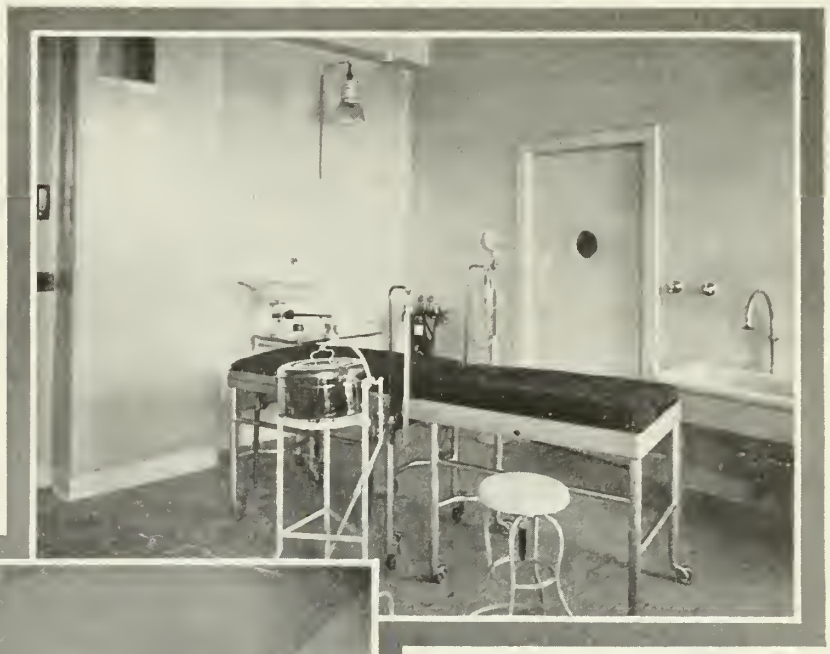


Fig. 9.

Fig. 10.

Fig. 11.

Columbia Hospital for Women and Lying-in Asylum. Fig. 9, typical delivery room. Fig. 10, corridor on operating floor, looking toward recovery room from obstetrical end. Fig. 11, surgeons' washup room.

nonsyphoning trap so designed that removing the cover exposes the entire trap for cleaning; operating and delivery rooms are provided with flushing floor drains, supplied with both hot and cold water and polished brass air-tight covers with ground joints.

The electric service is obtained from the public service corporation, the current being three-wire, 220–110-volt alternating, the 110-volt being used for lighting and the 220-volt for all motors. In general, the lighting circuits are distributed from two panels on each floor, while all fixtures are controlled by local wall switches, except a sufficient number in the halls and corridors for all-night service, which are directly controlled at the main basement switchboard. The light fixtures are of the inverted bowl type, the principal illumination being indirect, while the translucent glass bowl is of pleasing appearance. The lighting was so designed that the following average intensities three feet above the floor are obtained:

| | | |
|---|---|---|
| Wards ..... | .98 | foot-candles (general). |
| Wards ..... | .30 | foot-candles (night). |
| Corridors ..... | .53 | foot-candles. |
| Utility rooms.. | 8.25 | foot-candles. |
| Private rooms.. | 1.7 | foot-candles, on bureau. |
| Private rooms.. | .14 | foot-candles, on pillow. |
| Private baths... | 5. | foot-candles. |
| Operating table. | 22.5 | foot-candles, field unobstructed. |
| Operating table. | 17.4 | foot-candles, field obstructed by |
| Delivery room.. | 21.7 | foot-candles. [operator's head. |

At the head of every bed is a wall receptacle for either small night lamp or high intensity examination standard. All private rooms are supplied with a special reading lamp clamped to the head of the bed. In the operating rooms eight single lamp fixtures with opaque reflectors are located on the ceiling in the form of an ellipse 7 by 12 feet around the operating table. The axis of each fixture is inclined toward the center of the operating table, thus giving a high illumination of the field of operation regardless of the position of the operator, and eliminating the objectionable heating and possible infection from dirt falling from any fixture over the patient.

Large emergency gas lamps are located in each operating and delivery room, and small jets in all corridors, thus providing sufficient illumination to carry on the work of the hospital during a temporary breakdown of the electric service.

The 220-volt power service is distributed from the main switchboard to a complete laundry, with individual motor drive, three elevators (two patient and one service), six automatic push-button dumbwaiters, ammonia compressor and brine circulating pump of refrigerating plant, fan and kitchen motors, and transformers for low voltage nurses' call system.

Fig. 12.

Fig. 13.

Columbia Hospital for Women and Lying-in Asylum. Fig. 12, typical furniture for private room. Fig. 13, typical private room bath; note specially designed brasswork.

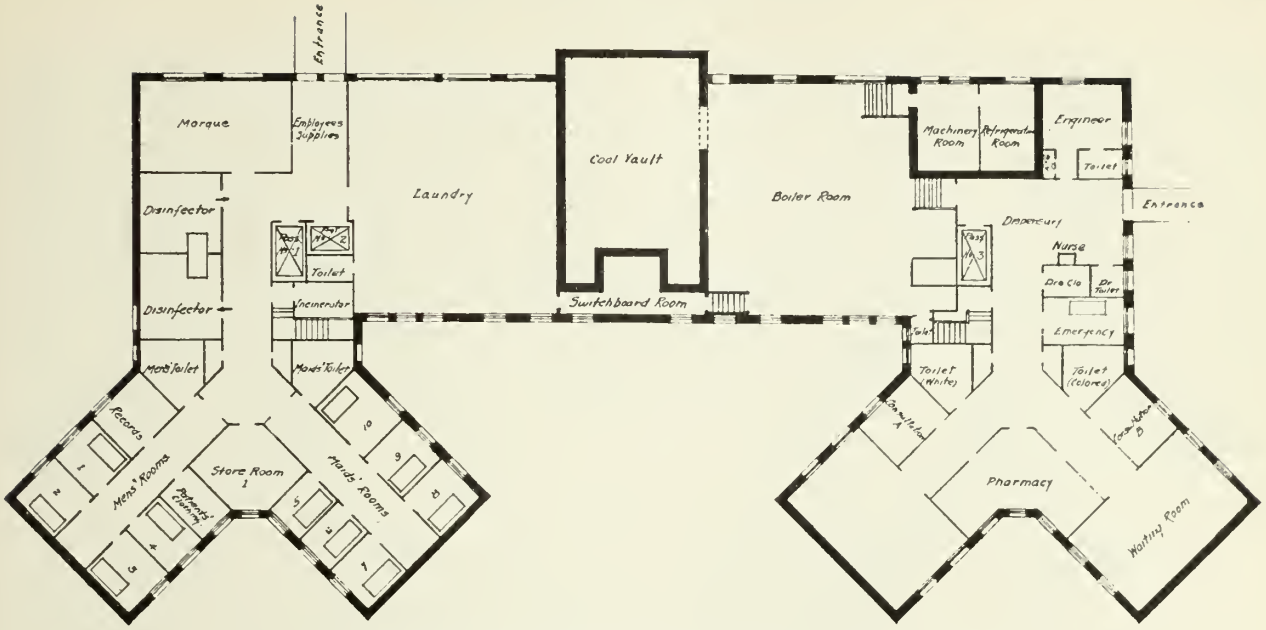



Fig. 14. Columbia Hospital for Women and Lying-in Asylum. Basement floor plan.

The nurses' call system is supplied with 10-volt current from transformers in the basement, and consists in the wards of a flush wall receptacle, with pear push-button extension, a light over the ward door, and a flush metal flash light annunciator in the attending nurse's office, while in the private rooms is a similar installation, with the exception that there is no light by the patient's bed. This system operates in the following manner: when the patient presses the button of the pear push, lamps light at the head of the bed, over the door or ward, and back of the designating room letter or number in the annunciator, and at the same time a buzzer sounds in the annunciator, which buzzer operates only while the patient pushes the button, though the lights remain on until the nurse resets the call at the patient's bed. Some of the advantages of the system are that only ten volts are carried to the patient's bed, all contacts being made mechanically and not through relays, and that the buzzer can be cut in or out as desired by a switch in the annunciator box.

For the sake of economy it was deemed advisable to have two separate telephone systems in the building, both with switchboard exchange—one to take care of the intercommunicating hospital requirements and the other for outside service. A hospital phone is located in all administration and service rooms, as well as in each nurse's station, and an outside telephone is located in each of the more important administration rooms and certain private patients' rooms.

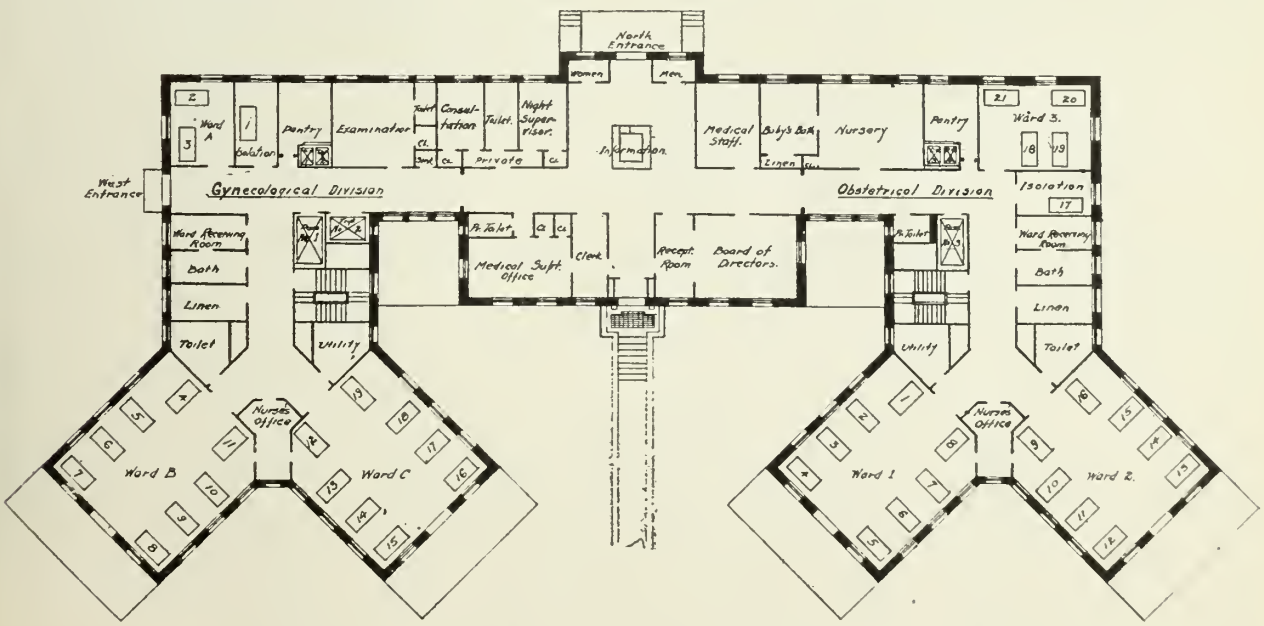



Fig. 15. Columbia Hospital for Women and Lying-in Asylum. First floor plan.

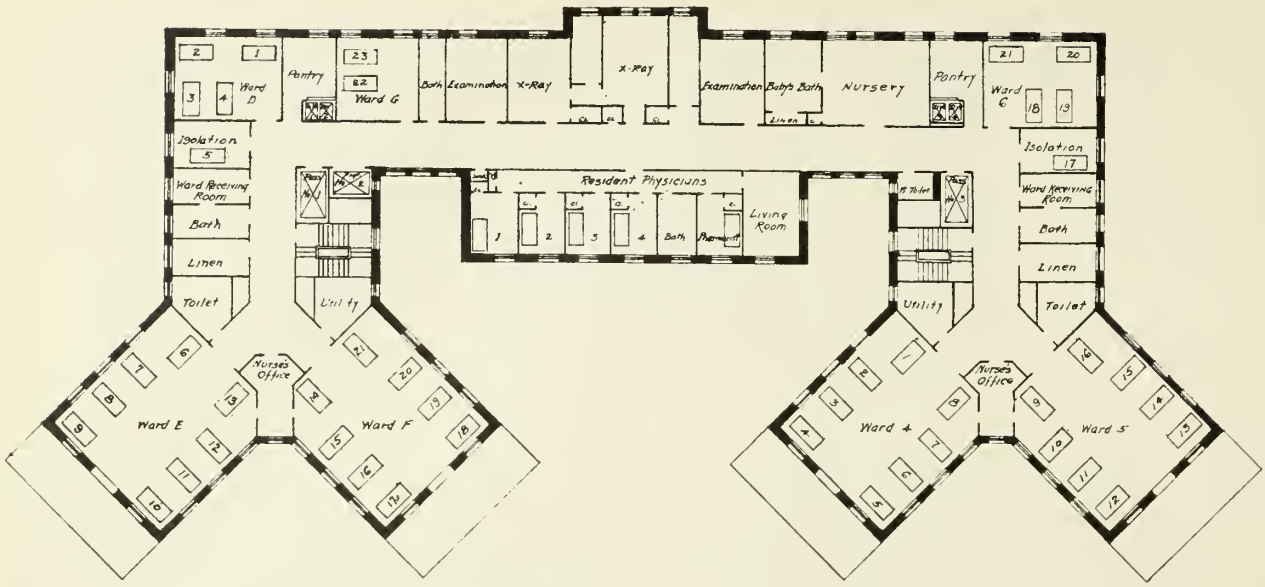



Fig. 16. Columbia Hospital for Women and Lying-in Asylum. Second floor plan.

The steam sterilizing equipment of the hospital is unusually complete. The sterilizing set for the operating rooms consists of large size water, dressing, utensil, and instrument sterilizers, which same equipment is duplicated for the delivery suite. The utility rooms throughout the entire building have a utensil sterilizer sufficiently large to accommodate bed-pans, as well as small water and instrument sterilizers and blanket and bed-pan warmers. Each examination room has a small electric instrument sterilizer. The disinfecting apparatus, located in the basement, is of the vacuum formaldehyde type, cylindrical in shape, and large enough to accommodate six mattresses at one time.

In order to take care of the garbage and waste of the hospital, there were installed three incinerators—one in the kitchen and one in each wing of the basement.

We have described the more important architectural and engineering features of the new Columbia Hospital, but, since the hospital was also completely furnished, and under the same direction as the construction, with all furniture, instruments, and miscellaneous equipment ready for occupancy, a few words on this equipment may be of interest. The wood furniture was specially designed for its particular use, and was uniformly of the best possible construction, being mahogany in the board room, natural oak in the office, fumed mission oak, with Spanish leather upholstery, in medical staff and living rooms, and gum walnut finish in private rooms. With the exception of the private rooms, all rooms occupied by patients are finished entirely in aseptic metal furniture, some of the special features of which might be mentioned: all joints are electrically welded, giving specially smooth connections; all beds are equipped with

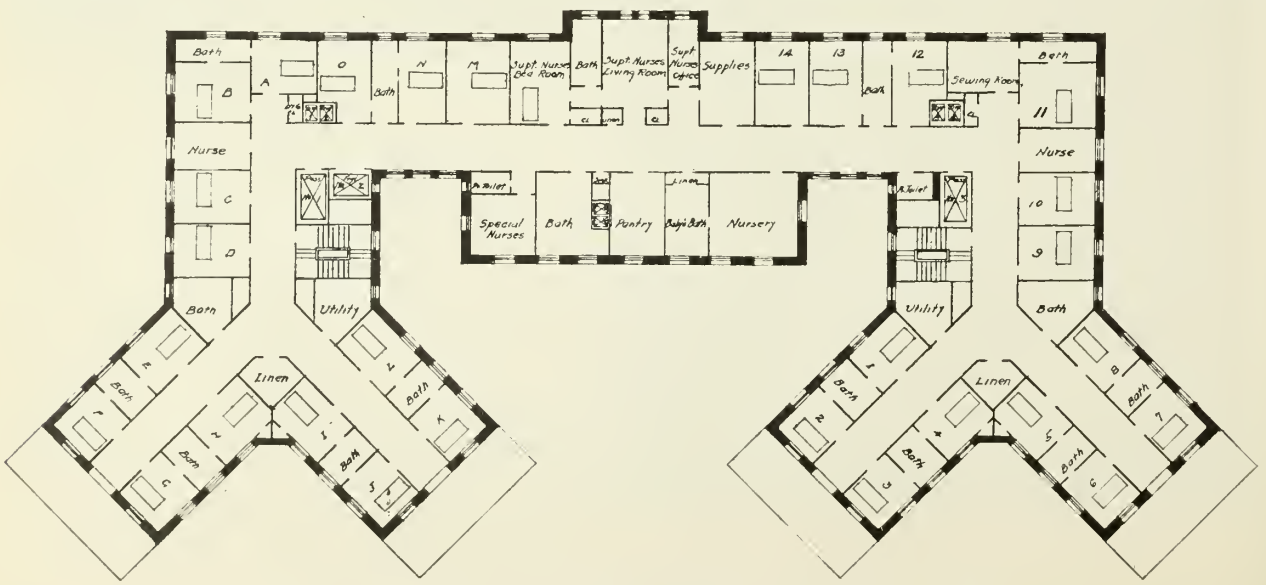



Fig. 17. Columbia Hospital for Women and Lying-in Asylum. Third floor plan.

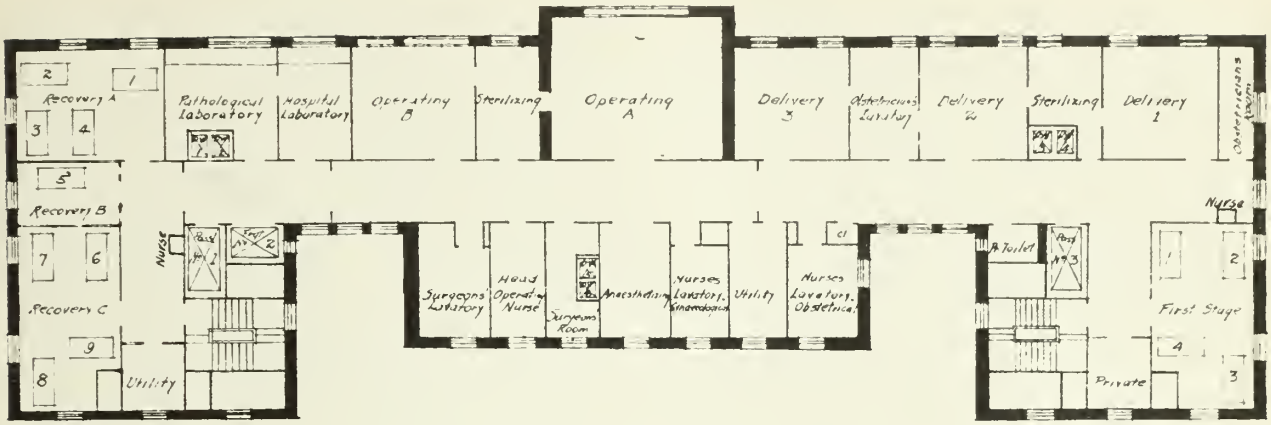



Fig. 18. Columbia Hospital for Women and Lying-in Asylum. Fourth floor plan.

Fowler frame springs instead of adjustable back rests, and have 5-inch rubber-tired wheels, with 10-inch extension stems for adjusting the height of the beds, only the foot wheels being swiveled, the head wheels thus acting as bumpers against the wall; and all table tops and shelves (except on bedside tables), counter shelves of medicine and supply cabinets, and tops of nurses' desks, are made of 14-gauge polished monel metal on account of its great durability and highly noncorrosive character. All mattresses are filled with pure South American hair, not only because they are more comfortable for the patient, but because this is the only material that can be properly disinfected without injury.

Considerable care was given to the selection of a complete equipment of surgical instruments, operating and examination tables, and obstetrical beds, as well as laboratory and pharmacy apparatus.

Besides the items of equipment previously mentioned, the almost endless amount of miscellaneous equipment necessary in such a building and furnished to this hospital may be best indicated by the following list:

Bath room accessories.
China, glass and silver ware.
Clocks.
Curtains.
Directories.
Enamel ware.
File cases.
Fire extinguishers.
Kitchen equipment and sundries.
Laundry equipment.
Linen and blankets.
Patients' registers.
Refrigerators.
Rubber goods.
Rugs.
Screens.
Shades.
Signs.
Vacuum cleaner.

Possibly the most interesting feature of this hospital is its comparatively low cost in spite of its standard of construction and equipment. The hospital cost 29 cents per cubic foot, including the mechanical equipment noted below, and 39 cents per cubic foot completely furnished ready for occupancy, including all expenses, or $2,180 and $2,950 per bed on similar comparisons. While the cost of hospitals is usually considered per cubic foot or per bed, it is difficult to get a strictly fair comparison on account of the different methods of cubing the building and of the variance in number of items of equipment included. In cubing this building the height was taken from the bottom of the footings to the high point of the roof, and porches and loggia were included at one-fourth their cube. The mechanical equipment included in the cost of 29 cents a cubic foot comprised all fixed items, such as heating and ventilating and refrigeration plants, refrigerators, electric conduits, wiring and fixtures, plumbing, vacuum cleaner, elevators and dumbwaiters, sterilizers, laundry, and kitchen equipment.

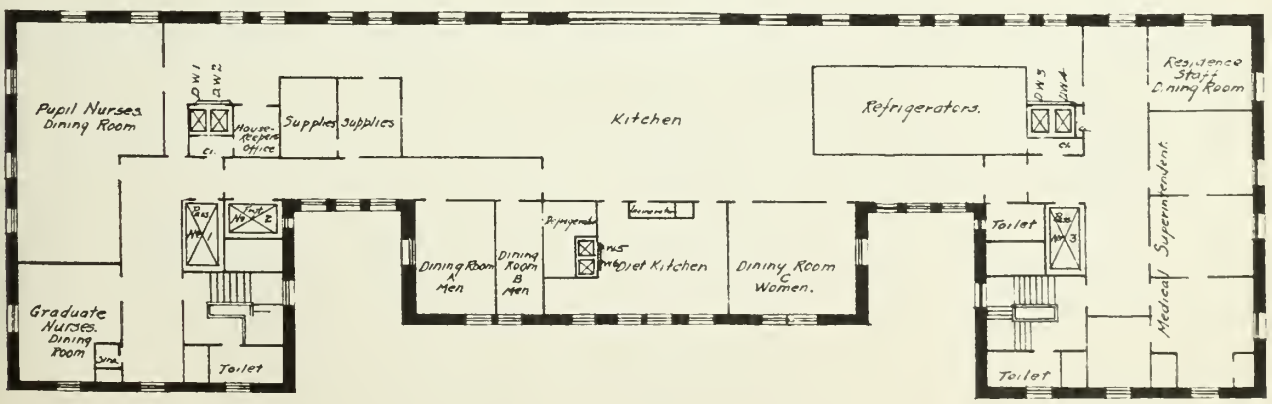



Fig. 19. Columbia Hospital for Women and Lying-in Asylum. Fifth floor plan.

# ANALYSES AND EVALUATION OF PROPRIETARY INFANT FOODS[1]

## Comparative Examinations Over Several Years Show Increase in Protein and Decrease in Starch—The Nutriment They Supply to the Infant When Prepared as Directed

By JOHN PHILLIPS STREET, Chemist, Connecticut Experiment Station, New Haven, Conn.

IN 1908 the writer examined a large number of the special foods for infants sold in this country. A reexamination of these foods has just been completed, designed to show, first, how uniform in composition these foods are as determined by analyses at widely separated intervals, and, second, to determine the changes which the foods as sold undergo in the process of preparation directed by the manufacturer. It is obvious that it is not fair to a manufacturer to condemn his food because ordinary methods of analysis show large percentages of unaltered starch when, if his directions for preparation are carried out, most, if not all, of the starch may be converted into soluble forms.

This new examination has shown that, with a very few exceptions, the differences in composition of the foods as sold in 1908 and 1915 are not large, and in general the percentage of protein has increased and that of starch decreased.

The preparations examined may be divided roughly into five classes: first, those prepared from cow's milk, with various additions or alterations, and ready for use simply with the addition of water; second, farinaceous foods, in which the starch has been partly or wholly converted into malt sugar or dextrin, and which are fed with cow's milk; third, cereal preparations, to which an enzyme preparation is added at the time of preparation for feeding; fourth, barley products for the preparation of barley water as an adjunct in infant feeding; and, fifth, miscellaneous products.

The first group, or those prepared from cow's milk with various amendments, includes:

A. D. S. Malted Milk.
Allenburys' Milk Food No. 1.
Allenburys' Milk Food No. 2.
Borden's Malted Milk.
Carnrick's Lacto-Preparata.
Carnrick's Soluble Food.
Cereal Milk.
Horlick's Malted Milk.
Lactated Food.
Meadow Malted Milk.
Nestlé's Food.

In these eleven brands the protein ranges from 8.8 to 15.4 percent and the fat from 0.6 to 14.2 percent, showing the wide difference of opinion among manufacturers as to the proper food for infants. While seven of the brands contain no starch, Cereal Milk contains a small amount, and Nestlé's Food, Carnrick's Soluble Food, and Lactated Food contain 20, 26 and 48 percent of starch respectively. These last three foods likewise show low water-solubilities—namely, 62, 58 and 32 percent—while in the other eight brands of this group from 74 to 84 percent of water-soluble material is present. While the ash in all the brands was almost completely soluble in water, the protein showed a wide range of water-solubility, the extremes being Lactated Food, with 11 percent, and Allenburys' Milk Food No. 2, with 74 percent. The two Allenburys preparations contained much more fat than any of the others.

[1]This is one of a series on Foods and Food Preparation; February issue, "Nuts and Nut Preparations;" next month, "Coffee and Coffee Substitutes.

Table 1. Composition of Infant Foods

| Brand. | Water | Fat | Fiber | Ash | Protein (N x 6.25) | Nitrogen-free extract | Starch | Reducing sugars, as dextrose | | Water-soluble | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Direct | After inversion | Total | Protein | Ash | Carbohydrates |
| A. D. S. Malted Milk | 5.93 | 6.75 | 0.13 | 3.08 | 14.06 | 70.05 | None | 30.64 | 70.12 | 77.82 | 7.81 | 3.04 | 66.97 |
| Allenburys' Milk Food No. 1 | 4.98 | 13.80 | 0.00 | 3.98 | 9.88 | 67.36 | None | 35.56 | 61.52 | 73.92 | 7.19 | 3.93 | 62.80 |
| Allenburys' Milk Food No. 2 | 4.20 | 14.20 | 0.08 | 3.70 | 9.75 | 68.07 | None | 35.80 | 64.84 | 77.32 | 7.25 | 3.67 | 66.40 |
| Allenburys' Malted Food No. 3 | 8.58 | 0.78 | 0.15 | 1.18 | 9.38 | 79.93 | 60.92 | 6.92 | 14.56 | 20.96 | 2.38 | 1.04 | 17.54 |
| Benger's Food | 10.55 | 0.83 | 0.15 | 1.00 | 10.75 | 76.72 | 57.66 | 2.68 | 8.24 | 19.16 | 8.50 | 0.97 | 9.69 |
| Borden's Malted Milk, Eagle Brand | 5.18 | 7.15 | 0.05 | 3.45 | 15.38 | 68.79 | None | 29.64 | 67.80 | 77.32 | 8.88 | 3.14 | 65.30 |
| Brooks' Baby Barley | 9.88 | 1.03 | 0.28 | 0.88 | 8.69 | 79.24 | 68.51 | 0.72 | 3.48 | 7.36 | 1.50 | 0.74 | 5.12 |
| Carnrick's Lacto-Preparata | 2.90 | 1.60 | 0.03 | 3.38 | 13.63 | 78.46 | None | 49.12 | 74.80 | 84.44 | 6.63 | 3.01 | 74.80 |
| Carnrick's Soluble Food | 1.87 | 1.05 | 0.45 | 1.30 | 12.44 | 82.89 | 25.99 | 19.24 | 49.52 | 57.58 | 2.94 | 1.19 | 53.45 |
| Wells & Richardson's Cereal Milk | 5.10 | 3.55 | 0.08 | 2.38 | 11.00 | 77.89 | 1.74 | 36.72 | 73.00 | 78.72 | 4.56 | 2.21 | 71.95 |
| Cereo Gruel Flour, Barley | 9.75 | 2.03 | 0.43 | 1.48 | 14.88 | 71.43 | 58.39 | 0.76 | 5.20 | 10.24 | 1.56 | 1.13 | 7.55 |
| Cereo Gruel Flour, Oat | 8.78 | 6.40 | 0.88 | 2.53 | 16.88 | 64.53 | 56.31 | 0.12 | 2.36 | 5.24 | 0.69 | 0.77 | 3.78 |
| Cereo Gruel Flour, Wheat | 8.78 | 1.30 | 0.10 | 0.48 | 12.81 | 76.53 | 67.61 | 0.84 | 3.32 | 7.68 | 2.56 | 0.24 | 4.88 |
| Eskay's Albumenized Food | 3.08 | 1.28 | 0.33 | 1.58 | 7.75 | 85.98 | 31.95 | 31.60 | 48.88 | 51.12 | 0.69 | 1.24 | 49.19 |
| Horlick's Malted Milk | 2.03 | 8.10 | 0.15 | 4.00 | 15.00 | 70.72 | None | 30.28 | 68.88 | 77.56 | 7.88 | 3.64 | 66.04 |
| Imperial Granum Food | 6.23 | 0.50 | 0.18 | 0.50 | 13.88 | 78.71 | 72.79 | 0.40 | 2.12 | 3.36 | 0.94 | 0.42 | 2.00 |
| Justfood | 6.95 | 0.03 | 0.10 | 0.30 | 0.63 | 91.99 | 3.32 | 14.80 | 95.84 | 91.24 | 0.63 | 0.31 | 90.30 |
| Lacnut | 3.75 | 31.30 | 1.15 | 2.10 | 22.19 | 39.51 | 2.31 | 12.04 | 37.08 | 41.34 | 3.88 | 1.38 | 36.08 |
| Well's & Richardson's Lactated Food | 8.53 | 0.55 | 0.10 | 0.88 | 8.81 | 81.13 | 47.93 | 16.92 | 28.52 | 31.54 | 1.00 | 0.67 | 29.87 |
| Meadow Brand Malted Milk | 3.20 | 5.20 | 0.30 | 3.28 | 14.50 | 73.52 | None | 31.52 | 71.04 | 79.84 | 8.50 | 3.25 | 68.09 |
| Mellazea | 10.48 | 2.20 | 0.40 | 0.60 | 5.75 | 80.57 | 74.36 | 0.84 | 1.60 | 2.50 | 0.44 | 0.44 | 1.62 |
| Mellin's Food | 2.98 | 1.80 | 0.20 | 4.45 | 11.31 | 79.26 | None | 34.24 | 77.64 | 84.50 | 5.13 | 4.10 | 75.27 |
| Nestlé's Food | 3.65 | 5.70 | 0.18 | 1.45 | 11.94 | 77.08 | 20.25 | 13.88 | 50.24 | 61.60 | 4.88 | 1.24 | 55.48 |
| Peptogenic Milk Powder | 2.50 | 0.03 | 0.10 | 1.43 | 0.19 | 95.75 | None | 64.48 | 90.32 | 92.42 | 0.19 | 1.34 | 90.89 |
| Ridge's Food | 9.43 | 0.33 | 0.18 | 0.75 | 10.31 | 79.00 | 70.93 | 0.80 | 2.96 | 5.04 | 1.44 | 0.48 | 3.12 |
| Robinson's Patent Barley | 10.58 | 1.40 | 0.23 | 0.85 | 6.75 | 80.19 | 70.20 | 0.92 | 2.92 | 5.70 | 0.81 | 0.58 | 4.31 |
| Wampole's Milk Food | 1.65 | 5.25 | 0.15 | 4.83 | 9.19 | 78.93 | None | 28.76 | 66.84 | 76.56 | 7.50 | 3.92 | 65.14 |

The second group, farinaceous foods in which the starch had been rendered more or less soluble, includes:

| | |
|---|---|
| Allenburys' Malted Food No. 3. | Justfood. |
| Benger's Food. | Mellin's Food. |
| Imperial Granum. | Ridge's Food. |

In four of these foods a malting process has been employed, in Benger's Food a pancreatic enzyme is claimed to be present, while in Ridge's Food dependence for the starch conversion has apparently been placed on simple baking. A characteristic of these foods is their low content of fat, Mellin's Food, with 1.8 percent, being the only one containing more than 0.8 percent. (It must be remembered, however, that all of these are directed to be used in conjunction with milk.) These are essentially carbohydrate foods, the protein in five brands ranging from 9.4 to 13.9 percent, while in Justfood only 0.63 percent of protein is present, this food consisting almost entirely of soluble carbohydrates and water. Mellin's Food contains no starch and Justfood about 3 percent, while the other four brands contain from 58 to 73 percent. The extent to which this starch is converted into soluble forms at the time of the food's preparation will be discussed later. In the foods, as analyzed, the starch conversion has been extremely small, except in Justfood and Mellin's Food, in which 90 and 75 percent respectively of the carbohydrates are soluble in water. The soluble carbohydrates in the other brands range from 3 percent in Imperial Granum to 17.5 percent in Allenbury's Malted Food No. 3. The solubility of the protein in Benger's Food is 80 percent and in Mellin's Food, 45 percent, while in the others only from 6 to 26 percent is soluble in water. Ridge's Food claims the presence of milk sugar, but, as only 3 percent of soluble carbohydrate is present, no more than is found in ordinary cereal flours, the amount of this ingredient cannot be large.

The third group includes four foods of the Cereo Company, in the preparation of which for the child's use an enzyme preparation called Cereo, supplied by the company with the food, is directed to be used. These brands are:

| | |
|---|---|
| Cereo Gruel Flour, Barley. | Cereo Gruel Flour, Wheat |
| Cereo Gruel Flour, Oat. | Mellazea. |

The following is our analysis of a sample of Cereo itself:

| | | | |
|---|---|---|---|
| Water and volatile | 34.38 | Total reducing sugars, as maltose | 13.50 |
| Alcohol by volume | 4.50 | Dextrose | 7.80 |
| Solids | 65.62 | Other nonsugar solids | 10.29 |
| Glycerin | 37.50 | Amylase | present |
| Protein | 3.63 | | |
| Ash | 0.70 | | |

The four Cereo flours show about the usual composition of flours from the respective grains. They are naturally high in starch and their solubility in water is low. For the effect of Cereo in converting their starch into soluble carbohydrates, see later in this discussion.

The fourth group includes two barley preparations offered as a means of preparing barley water. The two brands are quite similar in composition. Barley water made from Brooks' Baby Barley according to directions we found to have the following composition:

| | | | |
|---|---|---|---|
| Water | 98.40 | Carbohydrates | 1.42 |
| Protein | 0.14 | Ash | 0.04 |

The miscellaneous group includes Eskay's Albumenized Food, a preparation made from egg albumen and cereals, and directed to be fed with cow's milk; it is rather low in both protein and fat and contains about 32 percent starch. Lacnut is made from almonds and other nuts, and its composition is claimed to be "nearly identical with that of mother's milk, which it more clearly resembles in its properties than does any other food." Our analysis does not disclose this close identity. This food, however, is by far the richest in protein and fat of any of the foods listed in the table; it also contains but little starch. Peptogenic Milk Powder is chiefly milk sugar and contains no starch. Wampole's Milk Food is made from "malted cereals, beef, and milk, with wheat phosphates." It contains no starch and 65 percent of water-soluble carbohydrates, and exceeds in ash all the other foods given in the table.

### COMPOSITION OF FEEDING MIXTURES MADE FROM THESE FOODS AS DIRECTED

The dietitian is not concerned so much with the composition of these foods as the analyst finds them, though that of course is important, as he is with the actual composition of the feeding mixtures made from them when the manufacturer's directions are implicitly followed. Table 2 gives this information, the writer having selected arbitrarily the three-months-old feeding period for purposes of comparison. Allenburys' Malted Food No. 3 is not included, as it is not intended for infants under six months, nor are the two barley preparations and Lacnut, no feeding directions accompanying my sample of the last-named. In preparing this table the following average composition of cow's milk has been assumed, and a typical sample of top milk was analyzed as follows:

| | Cow's milk | Top milk |
|---|---|---|
| Specific gravity at 60° F | 1.0300 | 1.0300 |
| Water | 87.40 | 82.84 |
| Protein | 3.80 | 4.36 |
| Fat | 3.60 | 8.05 |
| Lactose | 4.50 | 4.05 |
| Ash | 0.70 | 0.70 |

According to Hutchinson, the average three-months-old infant should consume daily about 800 grams of human milk. Mother's milk at the three-months' period contains on the average 1.0 percent of protein, 2.9 percent of fat, 6.7 percent of carbohydrates, and 0.2 percent of ash, so that a daily feeding of 800 grams would supply to the child:

| | |
|---|---|
| Protein .....8.0 grams | Carbohydrates..53.6 grams |
| Fat ..... 23.2 grams | Ash ..... 1.6 grams |

Table 2. Composition of Day's Feeding When Foods Are Prepared According to Directions for Infants 3 Months Old

| Brand. | Total amounts of mixture fed. ounces | Grams supplied in day's feeding | | | |
|---|---|---|---|---|---|
| | | Protein | Fat | Carbo-hydrates | Ash |
| A. D. S. Malted Milk | 35 | 17.79 | 8.54 | 88.82 | 3.90 |
| Allenburys' Milk Food No. 1 | 21 | 9.81 | 13.70 | 66.86 | 3.95 |
| Allenburys' Milk Food No. 2 | 21 | 9.67 | 14.09 | 67.63 | 3.67 |
| Benger's Food | 30 | 18.93 | 15.74 | 37.27 | 3.26 |
| Borden's Malted Milk | 35 | 19.79 | 9.20 | 88.57 | 4.44 |
| Carnrick's Lacto-Preparata | 17.5 | 3.24 | 0.38 | 18.64 | 0.80 |
| Carnrick's Soluble Food | 24 | 8.60 | 0.73 | 57.60 | 0.90 |
| Cereal Milk | 32 | 14.48 | 4.67 | 102.61 | 3.13 |
| Cereo, Barley | 40 | 29.01 | 40.76 | 79.53 | 4.22 |
| Cereo, Oat | 40 | 29.99 | 42.89 | 76.39 | 4.73 |
| Cereo, Wheat | 40 | 28.01 | 40.40 | 81.86 | 3.73 |
| Eskay's Albumenized Food | 32 | 20.77 | 18.00 | 45.81 | 3.86 |
| Horlick's Malted Milk | 29.75 | 17.79 | 9.60 | 84.04 | 4.74 |
| Imperial Granum Food | 42 | 26.52 | 22.36 | 45.09 | 4.44 |
| Justfood | 27 | 21.33 | 20.03 | 53.87 | 3.98 |
| Lactated Food | 35 | 22.13 | 19.54 | 39.16 | 3.94 |
| Meadow Brand Malted Milk | 35 | 19.26 | 6.91 | 98.08 | 4.36 |
| Mellazea | 40 | 24.56 | 40.84 | 83.98 | 3.79 |
| Mellin's Food | 28 | 20.31 | 16.20 | 56.63 | 3.18 |
| Nestlé's Food | 32 | 7.18 | 3.43 | 46.43 | 0.87 |
| Peptogenic Milk Powder | 27 | 13.48 | 16.56 | 40.58 | 2.76 |
| Ridge's Food | 34 | 21.29 | 17.88 | 41.44 | 3.64 |
| Wampole's Milk Food | 32 | 17.07 | 9.75 | 146.90 | 8.97 |
| Mother's Milk, 800 grams | — | 8.00 | 23.20 | 53.60 | 1.60 |

Granting the accuracy of the figures quoted from Hutchinson, table 2 shows very conclusively how little the preparations made from most of these special infant foods resemble mother's milk either in the kind or amount of nutriment supplied. The table shows very strikingly the large excess of protein supplied by most of the feeding mixtures, sixteen of them supplying from two to three times as much protein as human milk. In one brand less than one-half of the proper amount of protein is supplied, one-sixtieth of the fat, one-third of the carbohydrates, and one-half of the ash. It is difficult to see how this food, prepared under the directions given, could supply proper nutriment to the child. As a rule, there is a great deficiency in fat, the foods prepared with water alone supplying only from one-sixtieth to one-third the proper amount. The four Cereo preparations yield a food very rich in fat, due to the use of top milk and not to the food itself. The two Carnrick foods, the malted milks, Cereal Milk, and Nestlé's Food are very deficient in this important ingredient. The carbohydrate content of the feeding mixtures more nearly approximates the amount found in human milk than either the protein or the fat; the kind of carbohydrate present, however, is generally radically different from that in mother's milk. In Cereal Milk, the malted milks, and Wampole's Milk Food the carbohydrates are present in great excess. The ash in the mixtures is generally high, from two to three times the amount supplied by human milk; the two Carnrick foods and Nestlé's Food, however, contain only about half the normal amount.

There is much difference of opinion among physiologists as to the essentials of a proper artificial infant's food, and the writer hesitates at this time to express any decided opinion one way or the other. The chief purpose of this paper is to give accurate analyses of these foods and the preparations made from them, and to submit these analyses for the information and guidance of The Modern Hospital readers who may wish to make use of one or the other of these foods in their institutional work.

It seems necessary, however, to call attention to claims made by three of these foods. Carnrick's Lacto-Preparata claims to be "the nearest approach to mother's milk that can ever be produced and remain permanent;" Lacnut claims that its composition is nearly identical with that of mother's milk; and Nestlé's Food claims that it "in its composition shows a close resemblance to mother's milk." The following summary of the analyses of these three preparations shows that, if the manufacturers' claims are correct, human milk in Jersey City, N. J., Battle Creek, Mich., and in Vevey, Switzerland, must be an exceedingly variable product:

| | Carnrick's Lacto-Prep-arata | Lacnut | Nestlé's Food |
|---|---|---|---|
| Fat | 1.60 | 31.30 | 5.70 |
| Ash | 3.38 | 2.10 | 1.45 |
| Protein | 13.63 | 22.19 | 11.94 |
| Carbohydrates | 78.46 | 39.51 | 77.08 |
| Starch | none | 2.31 | 20.25 |

## EFFECT OF PRESCRIBED METHOD OF PREPARATION ON THE STARCH OF THE FOODS

In the following experiments, of course, those brands containing little or no starch were not included. Twelve of the brands were prepared strictly according to the formulas and directions for infants three months old, except that in the Cereo foods the mixtures were not strained. The amount of food recommended was determined in grams and the volume of liquid (water or milk, or both) estimated in cubic centimeters. Four grams of material were then used for the test, the volume of liquid being made proportional. After preparing the ration, the mixture was centrifuged and soluble matters removed by decantation, this operation being repeated three

times and no other washing made. The residue was then treated with malt extract and starch determined in the usual way. It must be recognized that the residual starch in all cases is cooked starch, possessing therefore some advantages over raw starch from the standpoint of digestibility.

There was no actual digestion or conversion of starch to sugars, except where enzymes were incorporated in the food (Benger's Food), or were mixed with the food at the time of preparation (Cereo foods). The action in the other cases must have been due to that of boiling water on starch, rendering it partly soluble or colloidal. The action of any amylase in the milk must have been insignificant, since the time consumed in preparation was not great in any case, and usually the milk was boiled. The acidity of the milk likewise would probably not cause any considerable conversion of starch in the time employed.

Attention has already been called to the presence of amylase in Cereo. Benger's Food likewise contained amylase, together with an esterase and a protease, all enzymes normal to pancreatic extract, which this food is claimed to contain. The effect of these enzymes in the food is clearly apparent from the following table:

Table 3. Degree of Starch Conversion in Preparing Food Mixtures

| *Prepared with water only.* | Starch in original | Starch after preparation | Starch converted, percent |
|---|---|---|---|
| Carnrick's Soluble Food | 25.99 | 22.87 | 12 |
| Nestlé's Food | 20.25 | 16.92 | 16 |
| *Prepared with water and milk.* | | | |
| Eskay's Albumenized Food | 31.95 | 23.64 | 26 |
| Imperial Granum | 72.79 | 41.67 | 43 |
| Ridge's Food | 70.93 | 44.84 | 37 |
| Benger's Food | 57.66 | 5.71 | 90 |
| Lactated Food | 47.93 | 40.49 | 16 |
| Allenburys' Malted Food No. 3 | 60.92 | 27.76 | 54 |
| *Prepared with water, milk, and Cereo.* | | | |
| Cereo Gruel Flour, Oat | 56.31 | 7.20 | 87 |
| Cereo Gruel Flour, Wheat | 67.61 | 1.18 | 98 |
| Cereo Gruel Flour, Barley | 58.39 | 12.14 | 79 |
| Mellazea | 74.36 | 5.15 | 93 |

In the four Cereo preparations and Benger's Food from 79 to 98 percent of the starch was converted into soluble carbohydrates. In the other brands the starch conversion was relatively small; in Carnrick's Soluble Food, 12 percent; in Nestlé's Food and in Lactated Food, 16 percent; in Eskay's Albumenized Food, 26 percent; in Ridge's Food, 37 percent; in Imperial Granum, 43 percent; and in Allenburys' Malted Food No. 3, 54 percent. In fairness to this last-named food, it should be said that it is not recommended by the manufacturers for infants under six months.

## THE MUNICIPAL TUBERCULOSIS HOSPITAL OF KANSAS CITY

### Architectural Details of an Institution Built on the Lines of a Modern General Hospital—Distribution of Costs by Items, and Figured Both in Terms of Cubic Feet and Per Bed Capacity

By EDGAR P. MADORIE, Architect, Kansas City, Mo.

KANSAS CITY'S tuberculosis hospital is a municipal institution, located upon fifteen acres of a 135-acre farm, seven miles from the main portion of the city. The buildings of the institution are placed upon a plateau, which elevates them about 200 feet above the winding rock road leading up from the main road below, and from this vantage point the surrounding miles of tree-clad hills, streams, and gardened lowlands present a most pleasing view. In the northwest Kansas City forms the background.

The institution is reached by means of a private macadam road, branching from the Raytown or main road directly to the north and about a quarter of a mile distant from the site. From this point it extends around the cliffs to the top of the hills, approaching the buildings directly from the south.

The roadway is built at the edge of the cliffs, with huge masses of rocks, trees, and shrubbery on the hillside above and extremely low and rugged lands on the side below, where the most beautiful truck gardens are seen.

The buildings face in a southwesterly direction, whence come the prevailing winds, which are most desirable. The grounds immediately surrounding the buildings, for a varying distance of from 100 to 700 feet, are of a level and rolling nature, and covered with lawns beautifully designed and decorated with flower gardens and shrubbery, crooked drives winding and circling around and about the premises through the hills and valleys, to and from the entrances of the hospital and the future contemplated buildings, as noted on the group plan.

A bandstand occupies a prominent spot on the center of the lawn, where outdoor concerts will be given for the amusement and recreation of the patients. Croquet and other outside non-exciting sports are also provided.

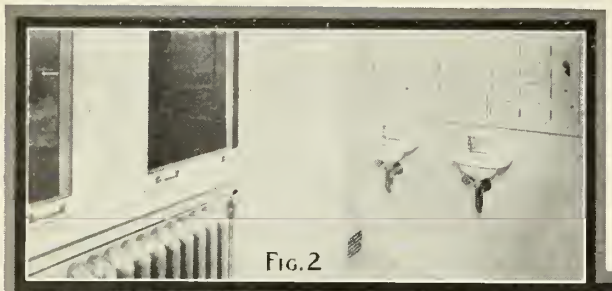


Fig. 2. Small lockers in wash rooms for patients, containing tooth brushes, towels, and dental supplies. Each compartment is provided with a key.

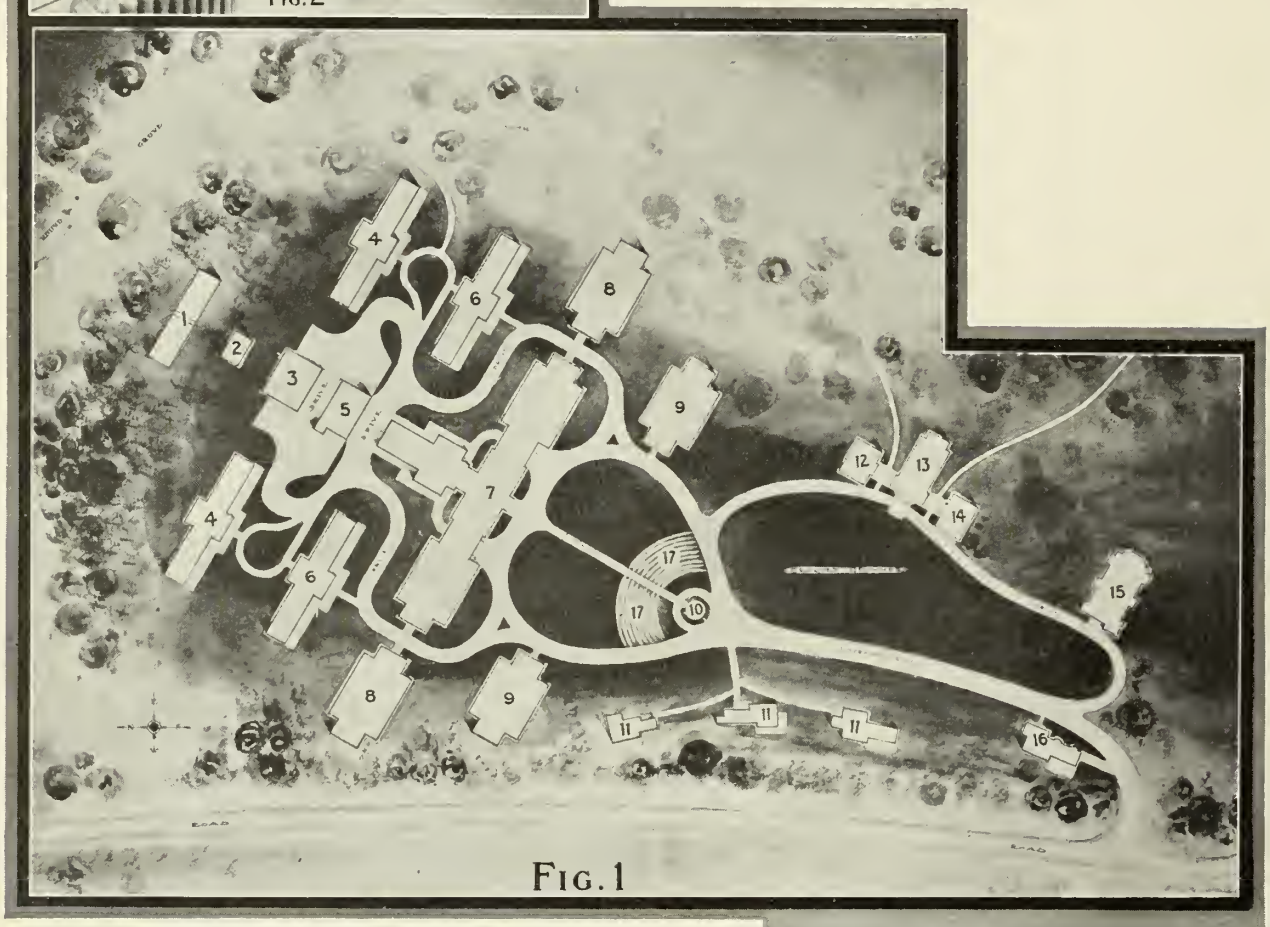


Fig. 1. Kansas City Tuberculosis Hospital. General ground plan. The straight road at bottom climbs the long hill to the hospital.

1. Filtration beds.
2. Septic tank.
3. Future garage.
4. Future lean-to buildings.
5. Power house and laundry.
6. Lean-to buildings.
7. Main building.
8. Future pavilions.
9. Future receiving ward.
10. Future band stand.
11. Future nurses' cottages.
12. Future women's library.
13. Future entertainment hall.
14. Future men's library.
15. Future chapel.
16. Future superintendent's residence.
17. Future concert benches.

Fig. 3. Patients' ward and the French doors opening out on the fresh-air porches. Note the Dutch door opening into the recreation room and the round corners and angles.

Fig. 4. Butcher's table, with drawers for various kinds of meat lying in refrigeration while the cook is preparing or cooking other foods. Note center weighted steam table covers. All kitchens and pantries are white enamel, and have nickeled brass piping and fittings.

### FUTURE BUILDINGS

The future buildings contemplated consist of the following:

- Additional wards for advanced patients.
- Lean-to buildings for incipient patients.
- Receiving wards.
- Isolated quarters for patients in last stage.
- Nurses' homes.
- Libraries (for male and female).
- Entertainment hall.
- Chapel.
- Bandstand.
- Garage
- Resident physician's quarters.
- Postoffice.
- Confectionery stores.
- Bars for cows.
- Silo.
- Chicken houses.

The institution, when the above buildings are erected, will be a city within itself, and will be most interesting to hospital people.

### ARRANGEMENT OF UNITS

The design of the institution was planned with a view of economy in the cost of maintenance, and the writer desires to call the reader's attention to the many original features installed, the manner of arrangement, and the effort made to obtain absolutely sanitary conditions. It will be readily seen that many inconveniences have been greatly reduced, if not entirely overcome.

The institution at the present time consists of a main building and power plant, constructed on the unit plan, in the shape of the letter T, and designed after the Spanish mission style. The main building is two stories high, with a basement under its center portion. The frontage is 379 feet and the depth 52 feet, the center portion extending back 125 feet, with a space of 30 feet to the power house.

The administrative offices are situated in the center unit upon the first floor, with the nurses' dormitory directly above, and the patients' quarters in each end unit on the first and second floors, with the patients' entrances and the nurses' offices between.

The commissary is in the rear unit, with the supply commissary below and the men's dormitory above. The units are joined to each other by corridors and partitioned off with swinging doors, the panels of which are glazed with plate glass. The superintendent's office is located so that he may step into the corridor and obtain a general view of the entire first floor, ascend one flight of stairs and obtain a similar view of the second floor. This affords constant observation of the institution with little effort, thus obtaining the best results.

### DESCRIPTION OF UNITS

#### UNIT NO. 1

The administrative unit contains the following offices and rooms:

- General business office.
- General examination room.
- Throat examination room.
- Superintendent's living rooms
- Nurse superintendent's office.
- Drug room.
- Laboratory and dark room.
- Waiting and library room.
- Staff dining room and serving room.
- Linen rooms.
- Public toilets and janitor's quarters.
- Main stairs.

The main entrance is at the center of the unit, which opens into a vestibule and then into the lobby. At the left of the lobby is the general office, with an open counter, and at the right the waiting room and library; at the front are the main stairs leading to second floor, and beneath them the corridor to the rear unit; at the left and right of the lobby in the center of the building are the main corridors to the offices and the patients' quarters.

The superintendent's living rooms join the general office, and are equipped with a well-ventilated disappearing bed, private bath, and clothes closet. The waiting room and library at the right of the lobby are connected and separated by a large cased opening, presenting a pleasing view of an ornamental fireplace flanked on each side by bookcases. The examination rooms and laboratory are designed as plain as practicable, having large north windows, furnishing the desired light. The laboratory is equipped with modern fixtures of vitroware, instrument case, and dark room. The case is sunk in the wall, finishing flush with the plaster, and the dark room is provided with cases, drawers, shelving, and work table. The drug room joins the examination rooms, and is provided with a large window, lavatory, clerk's desk, and open and closed cases on two sides of the room. The cases are made the full length of the room, and provided with a counter shelf 24 inches wide and 32 inches above the floor, with locked doors and drawers below and open and closed shelving above. These are adjustable and extend to the ceiling. The superintendent of nurses' office is located opposite the laboratory, and equipped with chart racks, private telephones, and a nurses' signal system annunciator. The staff dining room is entered by the staff from the main corridor, and is but a short distance from the kitchen. It is a bright, cheerful room, and is provided with a buffet, sunk into the wall and finishing flush with the plaster. The back is glazed with a beveled plate glass mirror, and the doors and drawers are made with a swell front. A picture mold is placed on the walls 24 inches down from the ceiling, on which pictures appropriate for the room will be suspended.

#### UNIT NO. 1 B—SECOND FLOOR

The nurses' dormitory contains 11 sleeping rooms, a parlor, linen room, bath, and toilets. The rooms are large, well lighted, and provided with large closets. They are designed for two persons in each room. The superintendent's room is designed for one person, provided with a fireplace.

Fig. 5. Kansas City Tuberculosis Hospital. Main building. City prisoners camped on the mound removed a great clay hill where this level space now appears.

The parlor is located at the center of the dormitory opposite the main stairs. It is entered by a large cased opening and equipped with suitable furniture, and is to be used as a recreation room for the nurses. There are separate entrances to the patients' quarters, so that a nurse may go back and forth and answer a rush call without passing through the office portion of the building.

UNIT NO. 2—FIRST AND SECOND FLOORS

Quarters for the patients consist of four wards, each provided with the following accessories:

Fresh air porches.
Recreation room.
Dressing and locker rooms.
Emergency rooms.
Linen rooms.
Bed-pan racks.
Wash rooms and toilet rooms.
Shower and tub bath rooms.
Separate entrances.
Private covered passage to dining room.
Attending nurses' room.
Stairways to second floor.

Fig. 6. Kansas City Tuberculosis Hospital. Main entrance.

WARDS.—Each ward is designed to house 30 patients, and is provided with openings on each side of the room, filled with Dutch doors, with transoms above, extending to the ceiling. The Dutch doors are designed so that any part of them may be opened and adjusted to suit the weather conditions. The patients' beds are placed opposite these doors, and may be rolled out on the porches, which are inclosed with screens. At the extreme end of the wards are the recreation rooms, which are provided with large French windows on three sides of the room, and equipped with game tables and magazine and paper racks. Two dressing rooms are also provided for each ward, and equipped with movable steel lockers, one for each patient. The toilets and baths are in separate rooms, each toilet being equipped with two closets, two urinals, five lavatories, two dental lavatories, large plate mirrors, and sixteen small lockers. These lockers are 6 by 8 inches by 8 inches deep, and in two rows, placed 24 inches above the lavatories and sunk into the wall, finishing flush with the plaster. Each locker is of ample size to receive two towels, soap, shaving mug, razor, comb and brush, tooth brush, and any other necessary supplies, for each patient, who will be required to keep all his supplies under lock and key. The bath rooms are divided into four compartments, with two tub baths and two shower baths, and large plate mirrors set in metal frames, sunk into the wall and finishing flush with the plaster, are placed over each tub. There are two linen rooms 7 feet wide and 14 feet long for each ward, provided with a window and equipped with cases on two sides of the room. The cases are made the full length of the room, with a counter shelf 24 inches wide and 32 inches above the floor, with locked doors and drawers below, and open and closed adjustable shelves that extend to the ceiling. Bed-pan racks are provided for each ward, constructed in the form of a case along original lines. The sides, back, top, and bottom are made water-tight of rust-proof material. The front is open, and the shelves made with ¼-inch rods

spaced 2 inches apart. The racks are raised off the floor 36 inches, resting on metal legs. The bottom forms a trough, with fall to sink. These racks are so constructed that an employee may place the bed-pans upon the shelves, attach the hose to the hot water supply, and wash and clean the pans without handling them. The wards are provided with independent entrances and covered passageways, so that the patients may be received, go in and out and back and forth from the wards to the grounds and to the dining rooms without trespassing or causing any congestion or disturbance in the administrative portion of the building.

ENTRANCE PORCH AND PASSAGEWAYS.—At the front entrance a covered porch is provided, with steps on either side and ornamental gate at the front. The floor of the porch is raised to a height level with the floor of an ambulance, thus allowing the receiving of patients and rolling them into the building without lifting. The covered passage is open at the sides and is wide, allowing ample room for the patients to congregate. It joins with the closed passage opposite the main dining rooms.

UNIT NO. 2 B—FIRST AND SECOND FLOORS

The main corridors in the entrances to the wards are large, and provided with wide, easy stairways for the use of the patients on the second floor. The attending nurse's room is entered from this corridor, and is equipped with chart racks, private telephones, signal system annunciator, and switches for the light control.

SIGNAL SYSTEM.—The electrical signal system is complete and installed in such a manner that the nurse may be called by a patient by a very slight touch on a push button. The call will be registered by means of a light appearing in the wall over the patient's bed, over entrance door or room in which the patient is located, and in the attending nurse's room, and also in the office of the superintendent. In answering the call the nurse releases the call by pushing a button only at the patient's bedside, otherwise the superintendent will be informed that assistance is wanted or that proper service is not given.

A nurse is in full charge of each ward and the telephone and signal systems are installed in such a manner that the superintendent will be in constant touch with her activities.

UNIT NO. 3—COMMISSARY

The commissary department, consisting of kitchen, dining room, bakery, cooler, storage rooms, work rooms, and grocery, have been carefully planned after much study of requirements for convenience of arrangement. The arrangement of the entire group of the commissary department was accomplished with a view to an economy of effort on the part of the employees, and each department may be entered directly from the kitchen. The employees may go to and from their various places of employment without passing through any of the other departments.

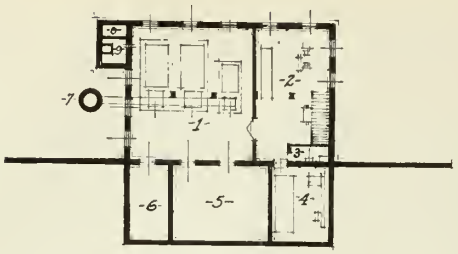
KITCHEN.—The kitchen is a bright, cheerful room, having large windows on two sides, which supply an abundance of fresh air and light, the fact being borne in mind in the design of this room that cheerful surroundings are as essential for the help as for the patients. The dimensions of this room are 30 by 40 feet. It is designed to accommodate 250 persons, and is equipped with the latest modern appliances, all parts of which are finished in white enamel, with nickel-plated trimmings. The equipment consists of the following fixtures and apparatus:

Range.
Broiler.
Steam soup and boiling kettles.
Steamer.
Egg boilers.
Coffee, tea, and water urns.
Dish warmers.
Steam pan tables.
Butcher table.
Dishwashing machines.
Pot and pan sinks.
Utility sink.
Ice water fountains.
Range canopies.
Ventilating ducts.
Serving trucks.
Sterilizing apparatus.
Serving pantry.

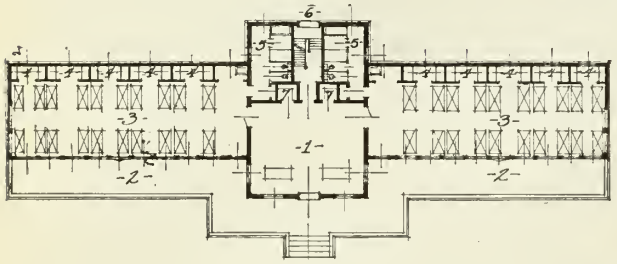
All equipment, excepting the range, is sufficiently elevated above the floor level to prevent the accumulation of dirt beneath, and the floor can be readily cleaned by flushing with a hose. The floor at the position of the range and on which the range is solidly seated is raised 6 inches above the surrounding floor level. The range, boilers, steamers, and soup kettles are in a row, placed in position along the wall at the far end of the kitchen, and provided with flues of sufficient size to insure a perfect draft, thus producing the best results. Canopies are provided, and placed over the range, boiler, steamers, and soup kettles. They are constructed with 1¼-inch metal studs suspended from the ceiling to a proper height above the cooking apparatus, and plastered with Portland cement on both sides, troweled to a smooth surface, and lined on the inside with rust-proof metal, with white enamel finish. Ventilating ducts also are provided, concealed in the ceiling of the canopies, extending to the walls on each side of the room and connected to flues that are extended to a point 4 feet above the building. These flues are provided with exhaust fans, pulling and forcing the heated vapor and grease-laden air from around the range and other apparatus. The ventilating ducts are extended out in the room in the angle of the ceiling, at the junction of the wall on each side of the room, and provided with intakes pulling and forcing all the escaping vapor, steam, and fumes from the room, thus cre-

ating a circulation of the air and removing all objectionable matter and leaving a cool, refreshing atmosphere.

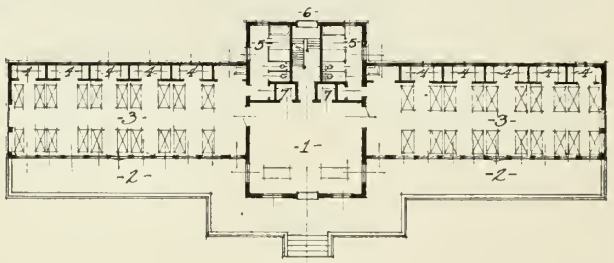
The cook's work table, steam table, and pot and pan sinks are located directly in front of the range and steamer, with a 3-foot aisle between. The cook's table is constructed along the lines of a kitchen cabinet. It is provided with a wide top made of hard maple, with a metal rack above for pots and pans, and on the under side of the top a refrigerator is provided and cooled with brine pipes. It is divided into eight compartments, consisting of drawers; the drawer backs, sides, and bottoms are metal, with ventilating holes, and the fronts are wood and insulated. The drawers are used for the various kinds of meats, etc., that are lying in refrigeration until ready for the fire, the fact being borne in mind that all perishable foods should remain in refrigeration until the time of cooking, thus insuring pure food. The steam tables consist of six pans of various sizes required for the various kinds of food. The lids are raised and lowered by means of a weighted chain suspended from above.



Power house.



Lean-to.



Lean-to.

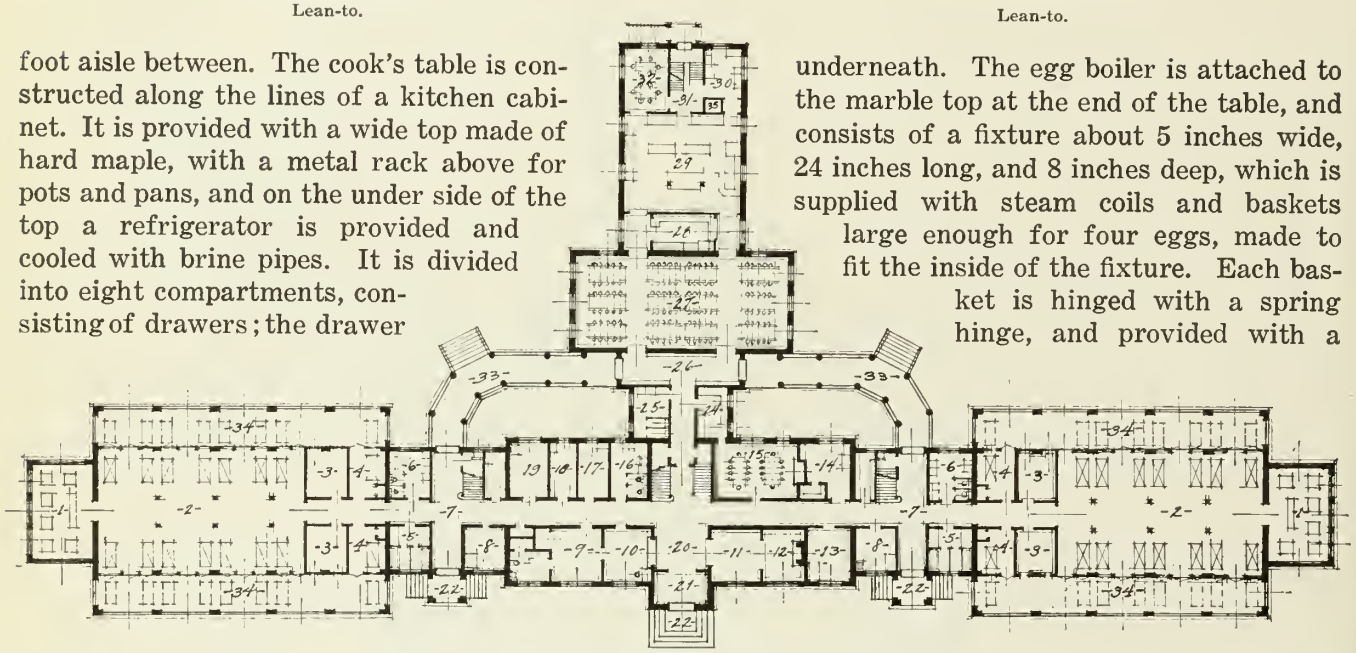


Fig. 7. Kansas City Tuberculosis Hospital. First floor plan.

MAIN BUILDING.

1. Recreation rooms.
2. Wards for patients.
3. Locker rooms.
4. Emergency room.
5. Patients' bath.
6. Patients' toilet and wash room.
7. Corridor.
8. Attending nurses' room.
9. Resident doctors' quarters.
10. Main office.
11. Waiting room.
12. Library.
13. Superintendent nurses' office.
14. Laboratory.
15. Staff and visitors' dining room.
16. Public men's toilet.
17. Throat room.
18. Drug room.
19. General examination room.
20. Lobby.
21. Vestibule.
22. Main entrance.
23. Patients' entrance.
24. Staff serving room.
25. Public ladies' toilet.
26. Passage.
27. Patients' dining room.
28. Serving pantry.
29. Kitchen.
30. Bake shop.
31. Rear entrance.
32. Help's dining room.
33. Covered passage.
34. Fresh air porches.
35. Elevator.

LEAN-TO.

1. Recreation room.
2. Open terrace.
3. Patients' wards.
4. Locker and dressing rooms.
5. Toilet and bath.
6. Rear entrance.
7. Linen closets.

POWER HOUSE.

1. Boiler room.
2. Engine.
3. Toilet.
4. Refrigeration room.
5. Coal bins.
6. Ash bins.
7. Chimney.
8. Sputum cup sterilizer.
9. Incinerator.

Coffee, tea, and water urns, cold water fountains, and egg boilers are in position directly opposite the cook's table and steam tables, with a 3-foot 6-inch aisle between them. They rest upon a table with marble top, and cup and saucer warmer underneath. The egg boiler is attached to the marble top at the end of the table, and consists of a fixture about 5 inches wide, 24 inches long, and 8 inches deep, which is supplied with steam coils and baskets large enough for four eggs, made to fit the inside of the fixture. Each basket is hinged with a spring hinge, and provided with a spring timer similar to that of a clock. When wishing to boil an egg one, two, or three minutes, or any part of a minute, the arrow indicator is turned and set for the length of time desired. When the egg is cooked, the basket will automatically spring out of the water; thus the egg is cooked and lifted from the water without watching.

The dish warmers are directly back of the urns, and the dish washer is at the side in position against the wall, with an aisle between. The

washer is provided with dish table in the form of a trough, with 6-inch hole at one end and a scrap food can on wheels below. The washer is run by power and the dishes dried by steam.

PANTRY.—The pantry is of unusual design, being inclosed on three sides with an open enamel serving counter, which is made a part of the kitchen. It is 18 feet long and 10 feet wide, and joins the wall between the kitchen and dining room. It is placed directly over the supply commissary, and provided with a dumbwaiter that carries food back and forth for daily use only. The pantry contains one large storage refrigerator and ice cream and milk coolers. The counter is provided with shelving and drawers, and equipped with sinks, with hot and cold water. It is raised 10 inches above the floor and rests on metal legs. There is ample space underneath for flushing and cleaning.

MANNER OF SERVING.—The equipment in the kitchen is carefully placed and located in such a manner that the waiters or waitresses may start with the serving trucks at a point near the cook's table, thence around two sides of the room to the various fixtures, thence to the exit opposite the serving pantry and into the main dining room, returning through an exit on the opposite side of the room to the kitchen, thus forming a circle. In this way efficient service will be obtained without congestion or waste of energy on the part of the employee.

BAKE SHOP.—The bake shop is equipped with an oven, candy and berry bowl, jacket kettle, table, refrigerator, and sink, planned and finished in a similar manner to the kitchen. It is located in a separate room back of the kitchen, with an exit between, and is only a few steps from the kitchen range, making it convenient for the cook in case he may be required to operate both. The baker's table is similar to a kitchen cabinet. It is movable and open all around, raised off the floor and provided with a marble top, with open shelves above, and flour and sugar bins, drawers, etc., below.

UNIT NO. 3 A—SUPPLY COMMISSARY

The supply commissary, consisting of refrigeration coolers, work room, storage rooms, vegetable and fuel bins, is located in the basement under the kitchen and so designed that the floor is on a level with the driveway in the rear. It is provided with large windows, furnishing ample light and ventilation, and an entrance in the rear opening into a main corridor, which extends through the center of this department, from which each compartment is entered independently.

STORAGE COOLERS.—The storage coolers are large and roomy, having a capacity of several months' supplies. The walls, ceilings, and floors are insulated with cork 12 inches thick, built in layers of 1½ inches, with a ½-inch layer of cement mortar between. It is divided into four compartments, one being for fruit and perishable vegetables, one for meats, etc., one for dairy goods, and one to be used as a vestibule. The coolers are entered from a corridor into the vestibule, thence into each compartment through large insulated refrigerator doors of the same thickness as the walls. The vestibule is provided and refrigerated, so that no loss of temperature will occur in the food compartments while opening and closing the doors.

SUPPLY COMPARTMENTS.—The supply compartments, such as grocery, work room, vegetable bins, and storage rooms, are inclosed with 1-inch mesh wire partitions raised 6 inches off the floor. Wire partitions were used in this instance, so that supervisory observation of the entire department is had with little effort, and perfect ventilation obtained.

PATIENTS' DINING ROOM.—The main dining room is a bright, cheerful room, having large windows on four sides, supplying plenty of fresh air and ventilation. It is 54 feet long and 24 feet wide, and may be divided into two portions by means of large rolling doors the full width and height of the room. It is entered by the patients by independent passages, and by the staff by way of corridors connected with the administrative portion of the building, thus relieving any possible chance of congestion.

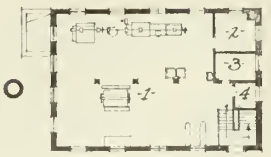
TABLES.—Instead of seating the patients at long rows of tables and close to each other, large round tables seating eight persons are provided. These tables are symmetrically located about the room, and give the appearance of a model hotel dining room, thus providing more satisfaction and content among the patients.

HELP QUARTERS.—The quarters for the male help, being located directly over the kitchen, are isolated from any other portion of the building. They are exposed to the weather on four sides and provided with independent entrances from the rear. There are eight sleeping rooms, shower and tub baths, toilet and wash room, linen rooms, and a corridor running through the center with large windows at each end.

TRUNK ROOMS.—Large trunk and storage rooms are also provided, having sufficient windows for light and ventilation, and supplied with floor drains, so that the walls, ceiling, and floors may be thoroughly washed and flushed with a hose and the refuse carried away in the sewer.

MORGUE.—The morgue is located in the basement between the supply commissary and the

main portion of the building, and provided with two entrances from the exterior and one from the administrative department. The walls and ceilings are insulated and finished with white enamel. It is secretly located, thus concealing as many of the gruesome sights from the patients as possible.



Power house.

Lean-to.

Lean-to.

UNIT NO. 4—THE POWER HOUSE

The machinery for the laundry and power plant being located in a separate building 30 feet from the rear of the main building provides a condition whereby all vibration or objectionable noises caused by the machinery will not be felt or heard by persons in the hospital portion of the institution. The driveway between is constructed with reinforced concrete, and the coal and ash bins and refrigeration plant are under it, the floors of which are on a level with the floor of the boiler room. Cast-iron coal holes are inserted in the concrete, so that the fuel may be dropped into the bins directly from the vehicle. The boiler room and engine room are located in the basement and the laundry upon the first floor. A concrete tunnel is run from the basement of the main building to the refrigeration room and thence to the engine room, thus providing a passage by which each may be entered without one going outside. The coal and ash bins are directly opposite the fire doors of the boilers, with ample space between so that wagons may be backed in from the exterior, and the ashes and refuse from the boiler room may be easily loaded and carted away, the floor of the boiler room being on a level with the floor of the driveway winding around the hill, with an easy grade to the concrete driveway over the coal bins, which is on a level with the floor of the basement of the main building. The floor of the boiler room, being in this position, affords the proper return flow by gravity of the contents in the pipes from the main building.

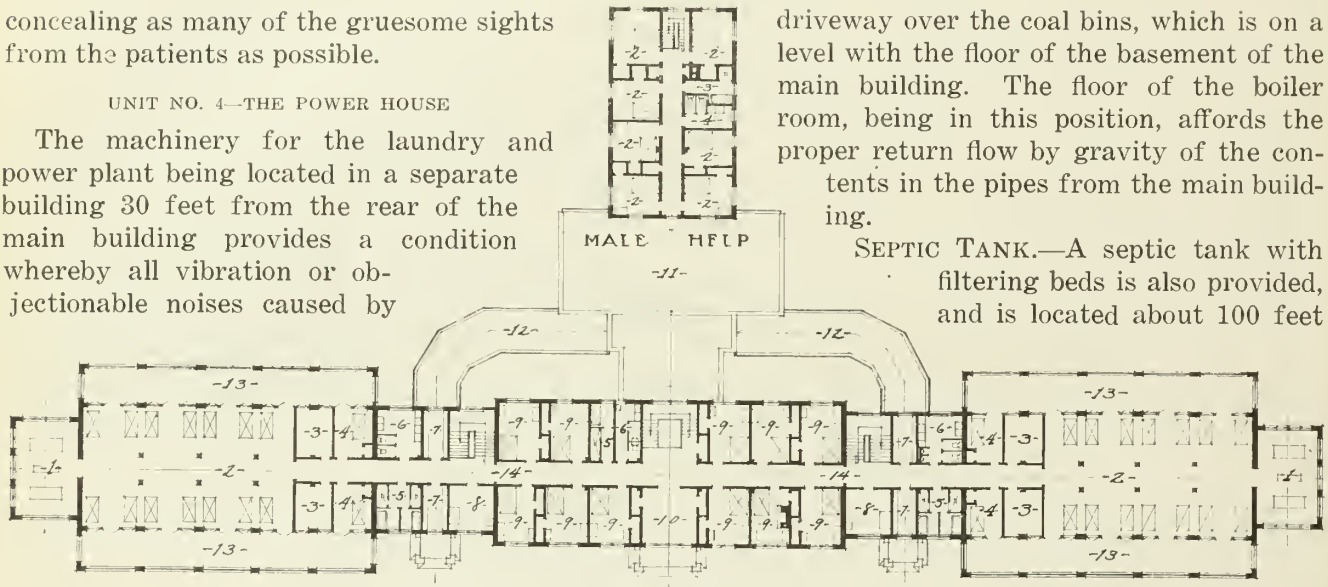



Fig. 8. Kansas City Tuberculosis Hospital. Second floor plan.

MAIN BUILDING.

1. Recreation rooms.
2. Wards for patients.
3. Locker rooms.
4. Emergency room.
5. Patients' bath.
6. Patients' toilet and wash room.
7. Linen rooms.
8. Attending nurses' room.
9. Nurses' bed rooms.
10. Nurses' parlor.
11. Roof garden.
12. Promenade.
13. Fresh air porches.
14. Corridor.

MALE HELP.

1. Corridor.
2. Bed rooms.
3. Bath.
4. Toilets.

LEAN-TO.

1. Corridor.
2. Bed room.
3. Parlor.
4. Linen room.
5. Toilet and bath.
6. Roof.

POWER HOUSE.

1. Laundry.
2. Office.
3. Cloak rooms.
4. Toilet.

SEPTIC TANK.—A septic tank with filtering beds is also provided, and is located about 100 feet from the rear of the power plant. This is also on the slope of the hill, and 150 feet from the filtering beds is a running creek into which empties all liquid on leaving the filtering beds. It is expected to be 90 percent pure when leaving the filtering beds.

ENGINE ROOM.—A concrete wall with dust-proof door separates the boiler room from the engine room, in which the electrical control, laundry power, vacuum cleaner motors, refrigeration plant, hot water boilers, and carpenter's work bench are located. It also has a concrete stairway ascending to the laundry and exit on the driveway over coal bins.

LAUNDRY.—The laundry is equipped with the latest improved machinery made for the sterilizing, washing, and cleaning of all linen and clothing used in the hospital.

GARBAGE BURNERS.—Garbage burners and sputum cup sterilizing apparatus are located on the outside of the power plant, adjoining the walls of the building. The garbage burner is connected with the hot water boiler, and supplies all hot water and steam required for the kitchen and sterilizing apparatus during the summer months.

SPUTUM CUPS.—The sputum cup sterilizing apparatus consists of two steam-tight tanks, one for fresh cups and one for soiled cups, and is the only place provided for them. Thus the incipient patient is required to bring his soiled cup to these tanks, depositing it in one compartment, throwing the pasteboard into the garbage burner, which is directly opposite, then take a sterilized cup from the other compartment and walk away. The engineer closes the doors each night, turns on the steam, and sterilizes the cups for the next day. In this way quite a problem is solved and a nuisance abated, as the patient takes care of the major part of this service, thus avoiding the necessity of securing employees for this work.

### SANITATION

Sanitation is a very important factor in a hospital building, and was carefully considered in the designing of this institution. The walls and ceilings were plastered with hard wall plaster and the floors are of composition. All angles and corners at the junction with each other were made with a molded cove with 2-inch radius, the floor material extending up on all walls to a point 6 inches above the floor, forming a base and finishing flush with the plaster. All angles and corners were formed in such a manner as to avoid cracks, which usually occur after building is thoroughly settled. All door frames are of metal, with round corners and edges, with a 2-inch return on each side, forming a casing finishing flush with the plaster, and the doors are plain slab doors without panels or projections of any kind. The window openings are without casings, the corners being round, molded with plaster with 2-inch radius. The edges on the sash are round, and the glass is glazed with wood stops set in white lead putty. All other trim is sunk into the wall, the face finishing flush with plaster, not allowing any projections where they were avoidable. The marble wainscoting in toilet rooms is sunk into the walls and the plaster, also finishing flush with the face. All refrigerators in the kitchens, bake shop, work rooms, and serving rooms are carefully and neatly built in the corners or walls of the rooms in which they are located, extending from the floor to the ceiling, the bottom being raised off the floor 6 inches, so that the floors under them can be readily cleaned by flushing with a hose. They are supplied from the refrigeration plant in the power house by means of brine pipes, thus avoiding the necessity of certain employees entering these compartments. In this way cleanliness of the compartments will be greatly assisted and a more sanitary condition will prevail.

### COMPOSITION FLOORS

The floors in general are yellow, with black borders in corridors and large rooms, and the floors of toilets, wash rooms, and bath rooms are white. The extremely light colors were used throughout the institution so that an unsanitary condition could not exist without being easily observed by the superintendent and the negligent employee reprimanded.

### WATER SYSTEM

An ice water system is also provided, with drinking fountains, which are installed throughout the various compartments and the corridors of the entire institution. It is a circulating system, and provided with bubbling and cup outlets, and the water is guaranteed a certain temperature at the spout or outlet. In this way water tanks, waste water receptacles, and employees trespassing are eliminated, and a condition prevails which is another great aid to cleanliness.

### TELEPHONE

A complete telephone system is installed, with a telephone in each compartment, and it is so arranged that a central operator is not needed. There are twenty telephones and twenty persons may talk at the same time. For instance, the superintendent wanting the steward of the commissary, pushes a button, which is located on the face of the phone, indicating commissary. The steward is notified by the sound of a bell and promptly responds. At the same moment the superintendent of nurses may call the attending nurse of a ward in the same manner and the conversation will not be heard by the superintendent or steward, and so on. The system installed in this manner provides a method whereby any compartment may be communicated with day or night without going back and forth through the building, and constant watch and supervision, from which the most efficient results may be expected, is had.

### MANAGEMENT

The sanatorium is financed and maintained by the city of Kansas City, Mo., and occupied only by its people. It is managed by the Hospital and Health Board, which consists of three members appointed by the mayor to serve for a term of two years. The present members are Thomas M. Finn, chairman, Baylis Steele, and W. C. Weideman.

The institution is operated under the direction

of Dr. Paul Paquin, who owned and operated the Asheville-Beltmore Tuberculosis Hospital, Asheville, N. C., and is considered an expert on tuberculosis.

### CAPACITY AND COST

The buildings are designed to house 150 patients, 24 nurses (female), 14 men servants, and the resident physician. It is of fire-proof construction and cost $151,561.61, which is equivalent to 31 cents per cubic foot, based on the following minute description of the materials used and equipment installed:

| | | |
|---|---|---|
| Building roadways to site | | $ 856.90 |
| Making excavation for the buildings | | 3,087.02 |
| Plain and reinforced concrete work, such as footings, foundations, exterior walls of superstructures, entire bearing walls, columns, floor and roof slabs, porch foundation walls, footings and columns, stairways, area walls, steps, and floors, lumber and labor for forms, and the temporary inclosing of openings in winter | | 37,122.79 |
| Brick chimneys, fireplaces, and interior gypsum block partitions | | 3,363.95 |
| Cut stone entrance steps and door sills | | 562.90 |
| Structural steel and ornamental iron work, such as I-beams, plates, bolts, anchors, coal hole chutes and doors, wall vents, stair railing, porch and passageway railings | | 4,031.00 |
| Interior metal door frames | | 2,068.50 |
| Lumber for front entrance porch, roof framing, rear passageway flooring, and roofs | | 327.28 |
| Rough hardware, such as nails, screws, sash weights, and sundries | | 336.92 |
| Trimming hardware, such as locks, butts, swinging door spring hinges, door checks, sash lifts, and fasteners, French door and window adjusters, door stops, hooks, cabinet hardware, etc., including labor and installing | | 2,768.50 |
| Interior plastering, ornamental cornices, and exterior stucco on all walls, etc. | | 8,448.60 |
| Roofing (asbestos, 10-year guarantee) | | 1,111.50 |
| Plumbing, including incinerators, sputum cup sterilizer, and hot water storage boilers | | 7,487.65 |
| Heating plant, low-pressure power boiler, and steam sterilizing supply | | 9,400.00 |
| Electric work, lighting, and power | | 3,794.00 |
| Sheet metal work, gutters, vents, flashing, tile porch roofs, etc. | | 2,090.90 |
| Reinforced concrete smoke stack | | 1,140.40 |
| Painting, interior finishing, and wall painting | | 3,980.00 |
| Marble work, toilet partitions, etc | | 3,002.00 |
| Mantel facings and hearths | | 89.80 |
| Mill work, such as door and window frames, sash doors, interior trim, and cabinet work | | 7,195.00 |
| Carpenter labor in general | | 4,224.40 |
| Superintendent | | 2,890.00 |
| Watchman | | 1,216.56 |
| Insurance liability | | 685.85 |
| Sundry labor and materials | | 390.07 |
| Screens complete, including labor of hanging in place | $1,521.60 | |
| Composition floors, first and second stories | 6,364.60 | |
| Cement floors with hardener for basement | 160.92 | |
| Window shades | 121.92 | |
| Refrigerators, storage refrigerators, and refrigeration plant | 5,263.00 | |
| Ice water and drinking water fountains | 1,125.00 | |
| Dumbwaiters and elevators | 374.00 | |
| Light fixtures | 435.00 | 15,366.04 |
| Kitchen equipment, including bakery equipment and the work room equipment, such as ice cream freezer, potato peeler, meat chopper, meat block, coffee grinder, etc | $ 570.00 | |
| Disappearing bed | 50.00 | |
| Telephone system | 763.00 | |
| Nurses' signal system | 800.00 | 7,313.00 |
| | | $134,350.73 |
| Architects' commission | | 6,717.53 |
| | | $141,068.26 |
| Furniture as follows: office desks, bedside tables, bed trays, post-mortem tables, linen hampers, food carriers, dressers, dining room tables, dining room chairs, nurses' reception room furniture, waiting room and library furniture, reclining chairs, table bed, sleeping ward chairs, sundry furniture | 2,653.00 | |
| Beds, mattresses and mattress protectors, pillows | 3,022.35 | |
| Bedding (blankets, sheets, bed spreads and bed linen) | 1,500.00 | |
| Kitchen and dining room linens | 200.00 | |
| Dishes and glassware | 300.00 | |
| Kitchen utensils | 340.00 | |
| Silverware | 200.00 | |
| X-ray | 1,125.00 | |
| Typewriter and sewing machine | 125.00 | |
| Medical and sundry equipment | 500.00 | |
| Patients' lockers in dressing rooms | 528.00 | 10,493.35 |
| | | $151,561.61 |

## THE INTERN QUESTION—WHERE LIES THE TROUBLE?

### Young Men Enter Hospitals to Learn, and Staff Members Should Teach Them—Egotism and Self-Assurance Are Faults of Youth to Be Corrected—The Best Methods of Selecting Interns

By A. B. TIPPING, Superintendent Touro Infirmary, New Orleans, La.

IN many hospitals one hears complaints made by the administrators and by the medical staff against the interns. To what extent are the criticisms leveled against the house staff justified?

The recent graduate from the medical college who decides to enter a hospital for a period of one or two years, to further his education before commencing to practice, at least displays good judgment and a desire to perfect himself, so far as he can, in his profession before going out into the world on his own account. He realizes that the college curriculum does not embrace everything necessary, as indeed it could not, to equip a man for his profession, and feels the lack of actual experience and practical work. He desires close association with men of mature judgment and broad experience, and so he decides that he must enter a hospital as an intern. He at any rate raises himself above the plane of those who, having struggled through their examinations and passed the state board, determine to commence practicing immediately. Of course there are some who would prefer to become an intern whose home or financial conditions preclude the possibility of their pursuing their studies further. Such men are usually to be termed unfortunate rather than unwise.

In most hospitals no salary is granted interns, and they are not permitted to accept any fees or emoluments of any description while in the hospital; consequently it is necessary for them to make some provision for their requirements during their period of appointment. There is no question that an intern is fully repaid for his time if he applies himself studiously to his work, but, just as it is customary to give nurses in training a sufficient allowance to cover their expenses during their training, I am not at all sure that it would not be the best policy to provide interns with a sufficient allowance to meet reasonable

expenses during their term of service. There are many graduates who would like to enter a hospital for two years, but lack the necessary funds to pay for clothing and petty expenses during that time.

It is only logical to presume that an intern enters on his duties with the right spirit—with the determination to spend his time to the best advantage and gain as much experience as possible during his term of service. A doctor would hardly select a hospital for a loafing ground for a long period of time, and unless he were ambitious he would not desire to face the daily routine which he knows confronts him on admission. Why is it, therefore, that there is often so much dissatisfaction expressed with the intern staff? In my opinion the cause is often found in the attitude of the visiting staff to the interns.

Undoubtedly one of the main reasons for dilatoriness is that some doctors do not explain their cases to the interns when making rounds. Always remembering that the house staff has not entered the hospital for the good it can do the patients, or as a favor to the medical staff or the hospital, but to take a post-graduate course, it is rather disheartening for them to have to walk behind a doctor while visiting the patients, and receive instructions for their care without getting the attendants' views of the cases. If all attendants would go over the history of their patients and their methods of treatment with the interns, it would, or should, create the necessary interest for the intern. An intern who, under such conditions, fails to do his full duty should not be in the hospital.

Another reason is the desire of so many young doctors to specialize in surgery, and they therefore take a greater interest in that branch of the work than in any other. A good, round fee for an hour or so's work in the operating room looks good to them—much better than treating a medical case for a small fee per visit. In a purely surgical hospital such interns are acceptable, but the very great majority of hospitals are general in character, and, if those interns are placed on the internal medicine, children's, or ear, nose, and throat services, their interest lags and they do not give the proper attention to their patients. There can be no possible objection to an intern mapping out his future career and deciding in which branch of medicine to specialize, but an intern who does not apply himself to every branch to which he is assigned not only fails to fulfill his contract with the hospital, but also neglects to take advantage of the opportunities to properly equip himself for his future work. The various branches of medicine are so interwoven one with another that doctors must have a good general knowledge of almost every branch. Apart from this, there are comparatively few who can afford to afterward sit in their office and wait for purely surgical cases at the outset of their career; the great majority have to do a general practice until they have established themselves. The writer once heard of an intern who, on being reprimanded by an attending obstetrician for not having properly cared for a patient, stated that he was not interested in obstetrics and he didn't care if he saw another obstetrical case or not. It is to be hoped, for the sake of the prospective mother, that he never will if this report reflected the true feeling of the intern. Nevertheless I believe that if one were offered him in private practice, he would eagerly grasp the opportunity of having the case.

There would appear to be no reason why the environment of a hospital should affect a member of the house staff, yet during the first few months of his term the average intern gives a more conscientious service than afterward. He begins to lose some of his ambition, he is not "on his job" as formerly, or he is "too busy" to do what is requested of him. Excuses become the order of the day, and the result is that the patients do not get the attention to which they are entitled, and the attendant becomes dissatisfied with his services. Perhaps the intern becomes on intimate terms with some of the nurses, and he will await his opportunity to have a chat with one of them instead of watching his patients. He may have some attraction outside the hospital, and watch the clock until the time arrives when he is permitted to leave the building. A variety of causes can be put forward, but not a single good excuse. Those who do not strictly attend to their duties and utilize their spare time in study or reviewing the day's work, from the day they enter until their internship is completed, are not only doing an injustice to themselves, but also to the patients assigned to their care.

Some interns prefer to teach rather than be taught. Distended with pride and self-importance, with an exaggerated idea of his ability, such a man will, for instance, meet the attendant when he enters the building with the announcement that the patient sent in an hour previously has been examined by him and he has a stone in the kidney, and requires operation. The attendant has probably been watching the patient for a day or two at home, and has finally sent him to the hospital for further examinations. But this is unnecessary now; the intern in a few minutes has diagnosed the case for him. Having passed his examinations with honors and being in possession of a good "text-book" knowledge, he is prepared and fully able to diagnose the disease of the patients

brought to his service; and if the attendant should quietly and kindly tell him that he has possibly been a little hasty in arriving at his decision, and tells him that his present opinion, which he desires to verify, is that the patient has pyelitis, the intern will be shocked, and wonder how the attendant ever received his appointment on the staff.

Fortunately there are not many interns of this caliber, but there are some, and they require careful handling and watching. They are not necessarily hopeless, and the attendant should not throw up his hands and treat them as such. The hospital is a school for training interns, and it is not right to refuse to teach the men who think they know everything any more than it would be good judgment to let a precocious child who starts a college life have his own way. Tact should be exercised, and they should be brought down, step by step, from the pedestal on which they have elevated themselves in their own minds.

It is a matter of some doubt in my mind whether the competitive examination system for the admission of interns to hospitals is the best. If a system by which students were graded by each of the college faculty—not only on a basis of examination results, but with percentage for punctuality, studiousness, neatness in their work, and personal conduct—could be introduced, and those who have the highest marks in the aggregate at the end of their college course were given the appointments, it would not only give an added impetus to the students to apply themselves more closely and thoroughly to their work, but would give the hospitals the best men. The man who always comes out first in examinations does not necessarily make the most efficient intern. Seriousmindedness, self-sacrifice, application to and thoroughness in their work, ambition, and subserviency to discipline are the characteristics of first-class interns.

A system such as this would, in my opinion, be eminently fair to the students and to the hospitals. Any question of unfairness would be eliminated, because the possibility of any one student being graded too high on account of personal friendship or any other reason, even granted that that were probable, by one or two members of a faculty, would not avail him much when the large number of instructors and lecturers is taken into consideration. The possibility of unfairness in that regard is too remote to discuss.

It is easy to say that, if an intern persists in not doing his duty, he should be requested to resign or be given dismissal papers, but it is not always the best policy to do this. It is extremely difficult sometimes to find a substitute, and an intern staff has become essential to the proper conduct of a hospital. Unless an intern does something glaringly wrong or becomes quite unreliable, the management hesitates to dispense with his services.

Strict discipline and close cooperation between the management of the hospital and the medical staff are absolutely essential. Rules in abundance can be printed for the guidance of the intern staff, their duties can be clearly defined, but all these guides are useless unless infraction of the rules or neglect of duty are promptly dealt with. Such lapses cannot always be detected by the superintendent; he cannot look over the history and records of every patient and know if they have been written up properly; he cannot keep in touch with every patient and see that the proper care and attention are given by the interns; he has to rely on the reports of the medical men, who sometimes hesitate to give an adverse report on an intern when they should. Not that an attendant should go to the superintendent with every little complaint—such matters are better adjusted between themselves; but if the intern continues to be unsatisfactory and displays no anxiety to improve, he should be reported, as that is the only method by which it is possible to remedy the condition.

One point must be remembered, and that is, interns will give the best service to those who make it a practice to teach them and so create interest in their work. It is just as much the duty of the members of the visiting staff to instruct the members of the intern staff as it is for them to operate on or visit their patients. The fault is not altogether one-sided. If the attendants will strive to help the interns along, sustain their interest in the patients by giving them the benefit of their greater experience, and explaining why and how they arrive at their conclusions and lines of treatment, instead of merely using them to inscribe their orders or to care for any emergency which may arise during their absence, I believe there would be fewer complaints against interns. The interns, on their part, must not attempt to exceed their duties; they must remember they are students, not in charge of patients, but in attendance on them under the instructions of their chief, whose orders must be precisely carried out and with whom they should keep in constant touch.

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In Spain leper houses are mentioned as early as 1067. In France, too, leprosy was common very early. In 1225 France, which at that time comprised only about half of its present area, had about 2,000 leper hospitals, as is evident from the last will of Louis VIII., who donated 8,000 solidi to each of these institutions. In England, it seems, leprosariums were established much later.—C. d'Elvert.

# THE LAUNDRY IN A THOUSAND-BED HOSPITAL

## New York City Hospital, in New Building and With New Equipment, Employs Rigid Technic and Careful Bookkeeping System—Some of the Details of Management Which Fix Individual Responsibility

By CHARLES B. BACON, M. D., Medical Superintendent New York City Hospital, Including Central and Neurological Hospitals

OWING to our inability to secure corporate stock issue for the purpose of erecting a modern laundry plant, it was necessary for many years to conduct our laundry activities in a very old, dilapidated building located far from the hospital, with limited facilities and with an inefficient operating staff; many of these were unpaid, necessitating frequent changes among the help. Therefore, not only our physical plant, but our operating staff, was such as to require constant and vigilant administrative supervision. It was, indeed, a formidable situation, and we are pleased to dismiss thoughts of those days with a brief comment. Hospital activities are ever extending—new appeals, even demands, are constantly made, and we have found it necessary to make available every possible nook and corner, until we have a capacity of approximately 1,000 beds.

The laundry service in a hospital of this size becomes at once of vital interest and importance. I fully appreciate that many of my coworkers have been hampered by similar conditions, and have longed for the time when a modern laundry building completely equipped could be afforded.

Four years ago corporate stock issue to the amount of $100,000 for building and equipment was secured, plans and specifications prepared, building erected and equipped, and placed in operation July 1, 1913. I immediately determined to place our laundry work on a substantial basis, aiming toward a maximum of efficiency in organization, management, control, and accounting, with the hope that the needs of the institution might be promptly and effectually met. Furthermore, I realized that increased laundry efficiency would at once mean increased efficiency in all directions, and would decidedly benefit the patient; this in the final analysis is the supreme object every true hospital administrative officer seeks.

A glance at the illustration will greatly assist the reader in forming an opinion of our laundry building. This is a fire-proof, three-story and basement building, with elevator service, and equipped throughout with modern machinery operated by electricity, each major machine having individual motor drive, except washers, which are operated by the Darrin automatic control in two series of five washers to each control. Note also the large window area, permitting a maximum of fresh air and sunlight. Where ample grounds are available, I much prefer the one-story to the multi-story laundry building, so planned and equipped that the work proceeds systematically from entrance to exit, including sewing rooms, with machines for making new articles, repairing, marking, etc. Furthermore, it is desirable to set apart an area for the purpose of outside drying of clothes, for it is indeed true that outdoor drying in the air and sunlight affords a certain freshness not procurable from inside drying.

### SEGREGATION OF LAUNDRY ACTIVITIES

Basement floor.—All laundry bags, plainly marked, containing soiled goods, each article also plainly marked, are here delivered from all units of the institution by collectors; received and counted by two men designated as the incoming laundry sorters and counters. This count is recorded on the incoming daily report of laundry. Every article sent to the laundry is listed on the laundry inventory sheets, which are made out by the sender in duplicate. The original is detached and placed in the laundry bag, and the duplicate retained by sender. The inventory of the sender is immediately delivered by the collector of laundry to the clerk, and the incoming count made by the laundry counter of incoming articles on the completion of count of articles contained in the different containers. This count is made independent of the sender's inventory; in fact, the purpose of immediately forwarding the sender's count to the clerk is to make sure that the incoming laundry count is strictly independent of this. The clerk immediately compares these lists, and any discrepancy is promptly noted and reported. This practice is followed in the case of all incoming articles. The correct account is entered by the clerk in the official laundry record book. In case of officers, physicians, nurses, and employees the official record is made under the sender's name. Wards are treated individually. The persons sending are held strictly responsible for having every article plainly marked and listed in original and duplicate. The retained duplicate is later used in checking returned goods.

Let us now return and follow the soiled wash from the sorting and counting room for incoming goods as above described.

Fig. 1. New York City Hospital laundry, Blackwell's Island.

Third floor.—The soiled wash thus sorted and counted is placed in trucks and conveyed by elevator to the wash room located on the third or top floor. Here are 10 washers, 4 extractors, 3 soap tanks, 1 starch tank, hand tubs, 1 truck dry room and trucks, tables, baskets, etc.; also 3 metal soap tanks, each having a capacity of 750 gallons, in which we make our own soap.

Fig. 2. New York City Hospital laundry. Wash room. Note group arrangement of machines.

Second floor.—The goods washed and extracted are removed from extractors, and immediately placed in trucks and conveyed by elevator to the second floor. Here are located 2 mangles, one large and the other intermediate; 14 hand ironing boards, each provided with 2 hand irons heated by gas; 2 Universal garment pressers, 2 conveyor dry rooms, body ironer, collar and cuff ironer, trucks, tables, baskets, hangers, etc.

First floor.—Goods, when ironed and folded, are placed in basket trucks and conveyed by elevator to the first floor and delivered to the counting and sorting room for washed goods. The laundry clerk is established in this room, and is responsible immediately under the supervisor of laundry for accuracy of sorting, counting, recording, accounting, etc., of all washed articles. Here every article must be carefully examined and special attention given to necessary repairs, mending, marking, etc. If found to be in good condition, articles are folded and placed in sanitary laundry trucks and conveyed directly to the ward or other proper destination. The delivery must be to the person responsible for these articles. This person at once removes goods from the trucks, counting and comparing articles received with duplicate inventory, immediately reporting any discrepancy, and depositing articles directly from the truck to linen shelves in the various ward supply closets. All articles requiring attention, such as mending, repairing, or marking, are referred at once to the sewing room. In this room many articles of wearing apparel, bedding, and table linen are made, together with all repairs, mending, marking, etc.

Fig. 3. New York City Hospital laundry. Drying room. Note traveling hanger.

The material is purchased in bulk in large quantities under contract and in accordance with standard specifications. A portion of the sorting room for washed goods is used for condemning worn-out articles. Final condemnation is made in the presence of the head laundress, matron, and superintendent of hospital or his assistant. An accurate record of all articles so condemned is kept. Another section of this floor is occupied by lockers for help. There is also a conveniently located room on this floor equipped with disinfecting chamber, sterilizing washer, extractor, etc. Another section is fitted up for the purpose of washing and sterilizing soiled surgical dressings, subsequently to be used as outer dressings. We have only recently inaugurated this latter system. Wash rooms, lockers, and toilets are located on the basement floor. A daily report of all laundry activities is rendered to the superintendent, and also weekly and monthly statements.

### REQUIREMENTS FOR EFFICIENT ORGANIZATION

Given a modern laundry building and equipment, the following requisites are essential:

1. Efficient manager.—An efficient person should be in charge, one having ability to manage this department along successful commercial laundry lines. It is often stated that no business is bigger than the person at its head. This we believe to be true, and is well exemplified in this particular position. In addition to possessing a thorough knowledge of the laundry work and machinery, such a person must know how to handle help. This requires much tact—even then frequent disappointments occur. We must remember that for the greater part help of this class is poorly educated, many of the people being intemperate, shifting, and even often failing to report. Administrative officers of hospitals and training schools for nurses should ever be mindful of these conditions, and encourage the one in charge who is making an honest effort to do his or her best in conducting the affairs of the laundry department.

2. Cooperation.—I am often impressed with the need among officers, physicians, nurses, employees —in fact, among all members of our hospital family—for a closer cooperation. This is the oil, above all other lubricants, that keeps our hospital machinery running smoothly without friction, makes for efficiency, loyalty, completeness, and maintains a maximum esprit de corps—in short, the true "hospital spirit." I confess a liking for these words. Moreover, such a spirit cannot be maintained unless each member is loyal and willing to cooperate, each one with another. Constant criticising is not only unpleasant, but sooner or later engenders bitterness. As a result, interest lags, and work is not well performed.

3. Sufficient help and supplies.—In these days of strict economy we are continually called on to achieve results under a minimum expenditure of money for labor, equipment, and supplies. The operation of our laundry work should not be handicapped. Clean linen and plenty of it at all times is essential, and any institution having a right to exist has no right to fail to recognize this principle as a duty. We hear much about standardization. I am in accord with this movement, with its beneficent results—that is, standardization of laundry building plans, personnel, labor performed, equipment, supplies, methods of accounting, recording, etc. We are convinced that the good results obtainable from laundry accounting methods amply repay for the additional amount of labor. We are thus enabled to check and discover the location when discrepancy arises, and hence place responsibility. A closer supervision is thus maintained and methods aiming toward accuracy established. Every hospital administrator knows how frequently the supervising nurse states she does not receive from the laundry the full number of articles sent. Without an accurate list made by or under her supervision of the outgoing and incoming articles, also list made by the laundry counter attached to the laundry staff of incoming and outgoing articles, it would be impossible to locate the place and person responsible for discrepancy.

In preparing this paper I desire to state that it has not been my purpose to touch too much on the various details; in fact, many have been purposely omitted. On the other hand, I desire to present, particularly to those who find the laundry department a difficult problem, a plan of operation which we have found and continue to find thoroughly practical, far more efficient than our former methods, one which definitely fixes responsibility, encourages economy, and recognizes the correlation between the laundry and the various other services of the hospital.

Finally, I wish to express my sincere appreciation to the Hon. John A. Kingsbury, commissioner of the Department of Public Charities, and Deputy Commissioners, Hon. Henry C. Wright and Hon. George G. Thomson, for their hearty cooperation and valuable advice in all matters, without which it would have been utterly impossible for us to have inaugurated many of the improvements specified in this paper. I wish to accord to them much credit for these and other improvements thus far effected at this institution.

The Arabs had already established hospitals in Spain in the eighth century.

## APPLICATION OF PRINCIPLES OF ORGANIZATION TO HOSPITAL SERVICE[1]

### Organization Is Not a Fetish, Not a Mechanical Figure, But a Flexible, Living Thing, by Which All Forces Are Marshaled for Achievement—The Patient Is the Center and Object of Hospital Service

By ROBERT G. VALENTINE, Boston, Mass.

WHEN I was asked to speak to this meeting of workers in hospital social service, I regretted that I had not first said to a strong group of hospital executives what I am now going to say to you. I do not like even to appear to be talking behind anybody's back, and, also, it seems fairer to state one's point of view in the company where it will find its strongest opponents. When I used to make the statement that there never would have been a drop of white blood shed by the Indians if Columbus and his followers had started right, I liked to make it to army officers. Then it was not only a real pleasure to me, but a definite education to some other people, when army officers who had been engaged in some of the bloodiest fights with the Indians got up and said they agreed with me. Were I to read this paper before a group of hospital executives, I believe many of them would agree, and their agreement would be a part of the educational process by which others would come to agree. Anyhow, from the point of view of this discussion, we should all put ourselves in the position of hostile critics.

#### I. PURPOSE OF A HOSPITAL

The first question on hospital organization seems to me to be: What is a hospital for? The hospital is for the patient. Valuable research may be developed in connection with the patients, skill may be acquired by physicians, surgeons, nurses, and hospital social workers as they deal with the patients, but the hospital exists primarily for the patient, and not for the doctor, surgeon, nurse, or hospital social worker. This seems like a trite statement, yet such lay experience as I have been permitted to acquire has led me to believe that the patient, while perhaps not a minor matter, is perhaps a secondary matter in a hospital.

But the subject appears less simple when we attempt to define the patient. In this definition we must make some delicate distinctions, for an apparently individual patient is not an isolated phenomenon. He still possesses, even as a patient, an unseverable relation to the present community and an unseverable relation to the future community. It should be borne in mind that every community is the world in little, exhibiting industrial, social, economic, political, and religious problems. If the patient has a communicable disease, even in a highly diluted sense, he must be considered not merely with his own individualistic best interests in mind, but also as an integral part of the community's best interests. In some cases he should be temporarily or permanently segregated. Each patient is not only a life, but a part of the stream of life. Therefore, each patient presents a particular point of application, not only for curative, but preventive, action.

In this connection it becomes clear that in two other important senses the patient is not only a life, but a part of the stream of life, for, first, his relation to his own future and to the future of the community in which he lives makes it important that he should be trained to a deeper sense of responsibility for his health, and, since his presence in the hospital is a great opportunity for acquiring this sense of responsibility, it becomes inescapable that the education and training of patients is a hospital function; for every patient is a blot on the humanity of the past in so far as that humanity has trespassed on fundamental laws, and the hospital should be one of the most powerful agencies in the community for diminishing the supply of patients.

In the second place, and perhaps this is the most dynamic point of all, the patient is the opportunity for knowledge by which future patients are more skillfully treated. He is not only the object of immediate humanity, but the subject of ultimate humanity. While delicate distinctions are being made between his individual rights and his social rights, he is the stimulus to invention, by which he shall be saved, but his kind shall perish.

If it be true that the patient is the prime consideration in a hospital, the hospital immediately ceases to be primarily a medical institution and becomes instead primarily a human institution, in which not only medical knowledge, but psychological knowledge, social knowledge, industrial knowledge, home knowledge and tenement house knowledge become prime considerations. It is, therefore, a fundamental condition of service in a hospital that it should represent the community. It should not only represent the community; it should excel the community. What the ordinary community does for the sick individual in crude and unorganized ways, one feels, from the very look of a

[1]Address delivered at the Massachusetts General Hospital on the occasion of the tenth anniversary of the Social Service Department.

hospital, from the very look of the well set-up physicians and nurses, that the hospital, with its knowledge and skill, is much better equipped to do. Yet perhaps as things are today it is often less humanly efficient than the crude unsterilized forces of the community.

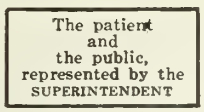


Chart I.

## II. FUNCTIONS OF A HOSPITAL

The second question the answer to which will help us to determine what hospital organization should be is: How can we make the fact that the hospital exists for the patient not merely point to an ideal purpose, but that he is a daily concrete part of the structure of hospital organization? We must learn to see that a hospital is primarily concerned with two functions, the social and the scientific, each of which is of equal rank with the other, and neither of which should be subordinated to the other. Furthermore, we must see that these two functions, the social and the scientific, are all the functions that a hospital should possess—that every other activity of a hospital is in some manner subordinate to one or the other of these two.

The principles underlying each of these functions should determine the form of organization of a hospital. On the social side it is a prerequisite of the wisest treatment of any patient to know the motives and conditions of his life, and this I take to be the controlling element in mapping out the activities of hospital social service. Here it should be noted that our definition of the patient contains the roots of all the relations which should develop between hospital social service and economic, industrial, social, racial, political, and religious development.

On the scientific side it is a prerequisite of the wisest treatment of any patient that there should exist in the hospital fullest opportunity to apply to every patient the sum of medical and surgical knowledge, and this I take to be the principle which controls the planning of all the scientific work in a hospital. Here it should be noted that our definition of the patient contains the roots of all relations which should develop continuously and vigorously with medical schools and research laboratories.

## III. PLACE OF BUSINESS ADMINISTRATION IN A HOSPITAL

About matters of organization we still have much to learn. The truly wise among us are not dogmatists, but questioners on a pioneer journey. But it seems to me a fairly sound hypothesis that in building up an organization we should build from the bottom up; or, to take a military simile, from the firing line back; or, to take a factory simile, from the workers back. Take, for example, the soldier in the trench. The whole military organization, including its industrial and social aspects, of that soldier's country can be tested out by asking, both in the field and at home, whether everything that is planned and done helps the man in that trench. Everything that does not help him or hinders him is worse than unnecessary. So it is with the particular worker at a particular machine in a shop. All behind him—the foreman,

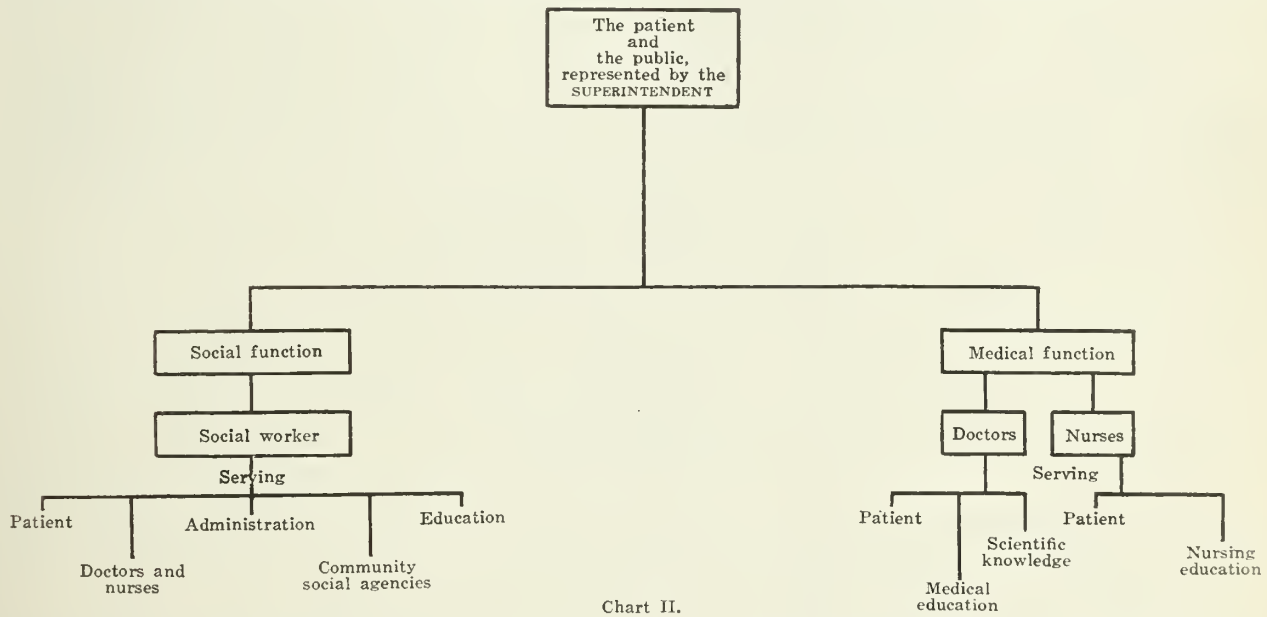


Chart II.

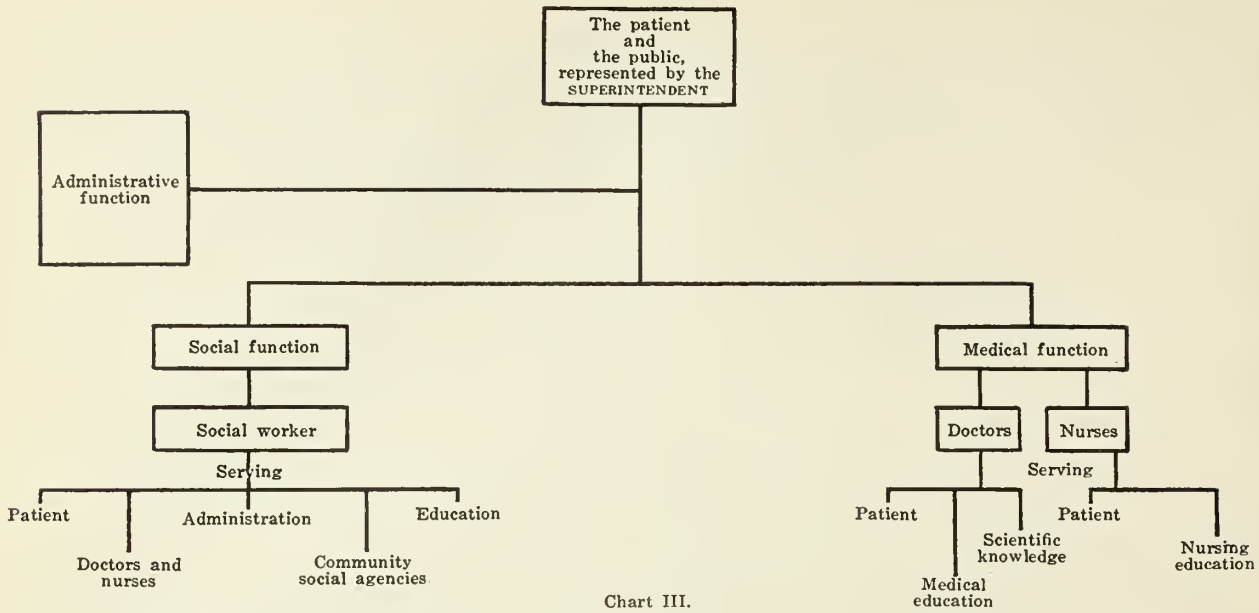


Chart III.

the superintendent, the managers, the board of directors, the shareholders—are only legitimate if they help him at his work. So it is with a hospital—the test of legitimacy is the service to the patient through the social and scientific functions. It thus becomes clear that all administrative functions are the servants of the social and scientific functions, as appears on chart III. The administrative and business end bears, you will see, a staff relation to the general manager of the hospital, who represents the patient and the public, as we saw him on chart I.[2]

[2]Staff in the "line and staff" sense; not in the hospital staff sense. In this sense the "staff" advises the "line," with expert advice always at hand, and gives orders.

### IV. THE HOSPITAL EXECUTIVE

The next question seems to me to be: How does the general manager, representing the patient and the public, and giving line orders in the light of the best business and administrative staff advice, make it certain that he handles his job efficiently in order to mobilize the social and scientific forces on behalf of the patient? I assume the general manager to be a man or woman desirous of facilitating the functions and every part of each function in the best performance of its service. He must be of intellectual and executive capacity to keep his sense of perspective amid all the exigencies which arise. Take, for example, the

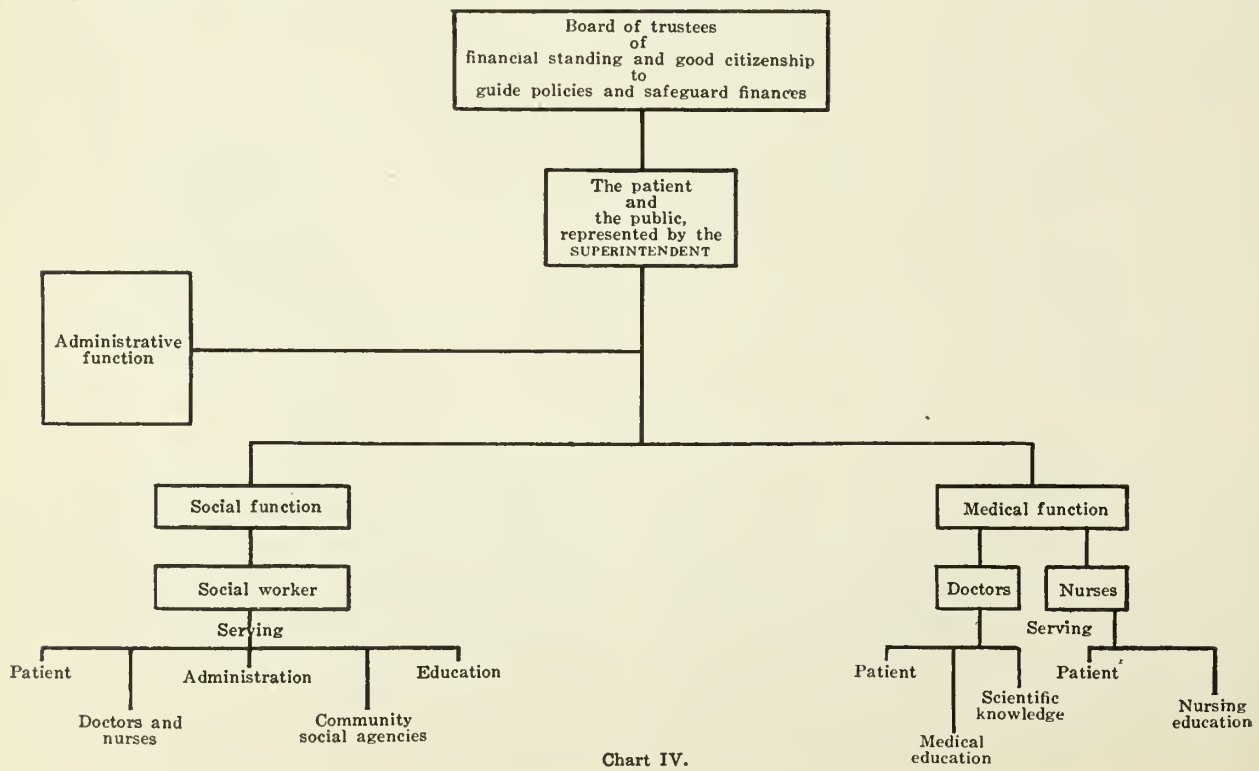


Chart IV.

question as to when or how often the family or friends of a patient should be allowed to visit him. Another question: Should autopsies be made in all cases where the physicians request it, or only on consent of the family? Another question: Is the right balance held always between medical and surgical treatment? Other questions: Taking financial limitations into account, is equipment well proportioned among all services? Is each service so developed as to be of adequate assistance to other services? Is there overstrain and consequent inefficiency among the staff? Because of limitations in these directions, are patients accepted who cannot be properly cared for? Is the hospital becoming overinstitutionalized? The mere statement of the case makes it appear to us axiomatic, I think, that no one man, however desirous he may be, is wise enough or strong enough to answer the questions alone—he must have help. Here is one of the very numerous cases where it is necessary for us to give consideration to the fact that the strong need help as much as the weak, or more. The hospital executive needs help just because of the strength of his position. How can he get it? He must get it, first of all, in his relations to his board of trustees.

The factors which go to make a good board of hospital trustees are good citizenship, financial standing, and keen judgment of men. Unconsciously as these powers may sometimes be exercised, they are nevertheless existent. At least at the start these qualities, as expressed in the ideals of the trustees, affect the whole policy of a hospital manager, since the trustees appoint him. So far the situation is entirely an autocratic one—the director at the start is a personal servant of the trustees. If he is a person of Napoleonic characteristics, facing a strong board, or a less vital person, facing a fairly acquiescent board, he may come to dominate the situation. But, either as servant or dominant, his relation to his work is unsound, because neither he nor his board of trustees, singly or together, have any guarantee that he will always stand where, if the principles we have so far laid down are correct, he ought to stand—in effect, by the bedside of every patient in the hospital, by the side of everyone who comes to a clinic, and by the patient in effective follow-up treatment, advice, and knowledge of results. The hospital executive is surely a case of the strong needing help.

### V. THE STAFF AND REPRESENTATION

Our next question on hospital organization, therefore, is: How can the board of trustees and the superintendent, who should represent the patient, use himself and the board as servants of the patient to build up guarantees that he will remain progressively efficient? The best hypothesis seems to be that he can insure his good work, and be certain of getting always better and better work, only through representation.

The principle of representation involves three elements:

1. A board composed of representatives of all the parties concerned in decisions.
2. Information available for consideration by this board, and developed in a most thoroughgoing, scientific manner out of the day's work.
3. A method of procedure by the board in considering this information which insures that each element under consideration shall be studied free from confusion with other elements.

As to the first point, in any hospital, as in any family, institution, or business concern, a lot of forces are always acting. This activity of forces is inevitable, whether they are organized (chart V) or unorganized. The only question, then, is: Are they better organized or left in their chaotic state? I think we shall agree that in a hospital, as in any organization, the right idea is to get into a central body representation of all the elements of service, for only in this way can we be sure to discover and handle intelligently the forces which exist. It becomes a necessity, then, of wise human conditions to make a conscientious attempt to understand and relate all the forces. To organize in this sense means that we procure always greater constructive criticism and always greater harmony among functions. And there is an interesting byproduct—we always find that to recognize forces that do exist and act, and bring them into effective organized relations, taps sources of invention and power unknown before. A hospital, for example, in which every element on chart V is not, as a matter of routine, effectively represented in decisions as to policy, is bound to give its patients a service far short of its inherent capacity.

The second point—the need for information and data out of the day's work—requires attention for a moment. Every job in an organization, without exception, ought to be thoroughly analyzed and its description written out. Moreover, the relations between all jobs should be also analyzed and written out; hence, on the completion of this work, there would exist a comprehensive description of the whole organization. As a part of the description of these jobs, the qualifications needed in the personnel would appear. At least once a year every job description should be carefully revised. This revision should be a continuous process, so that the latest knowledge

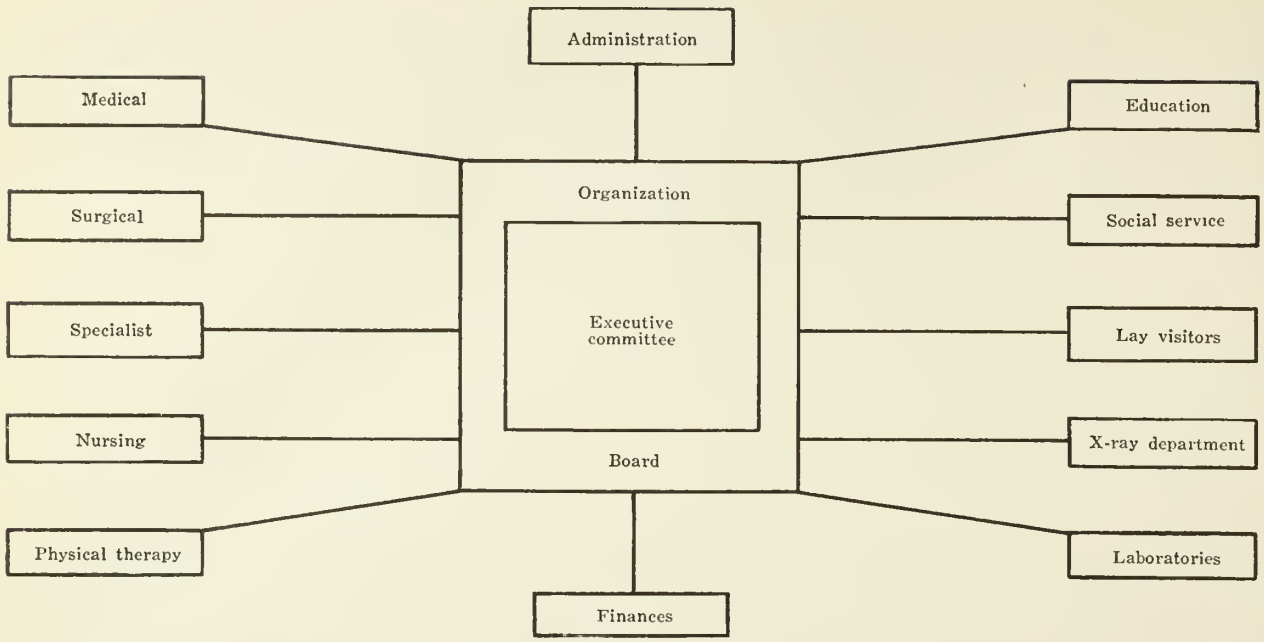


Chart V.

as to the demands of a particular job should be incorporated in its description.

The third point—the procedure of the representative body—we can now analyze. Suppose that the job of a salesgirl in the cloak department of a store is to be analyzed. The board is made up of all the parties at interest—a representative of the management, a representative of all the workers in the store, and a representative of all the salesgirls doing similar work. To this board comes the analysis of this salesgirl's job as it was drawn up by the scientific research department of the store. This board, which in industry we call a determining board, first decides, on the basis of the scientific information before it, whether the job has been fully and properly described. Remember that the representative of the workers is on this board, and that the act of reaching continually to the racks for heavy cloaks puts a special strain upon the workers, which, if not properly guarded against, may express itself in occupational neurosis. If the board decides

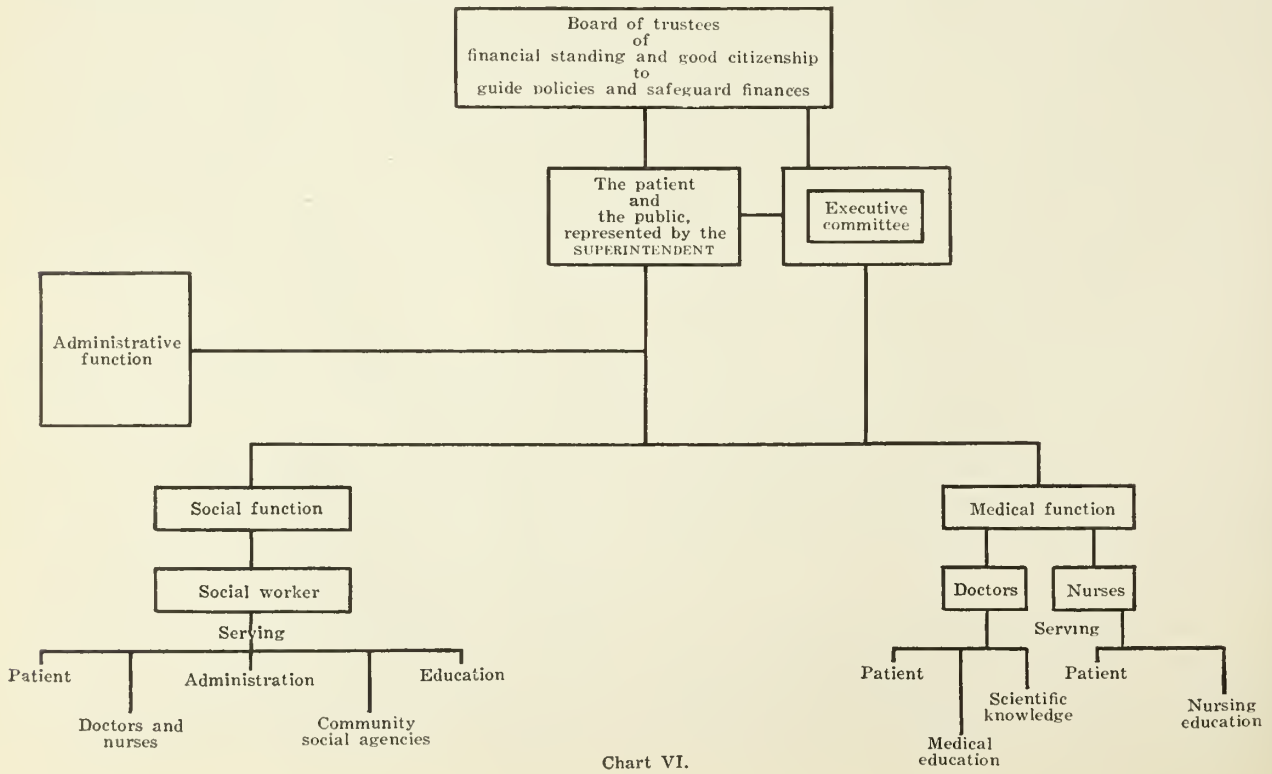


Chart VI.

that the work has been fully analyzed, this analysis then becomes the standard description for that work. The finding so made would then go to another department of the store, where all the salesgirls on this particular class of work would be rated against the agreed standard for that job. These ratings would, in turn, be sent back to the determining board for its O. K., and, if O. K.'d by them, would then become the efficiency ratings of these salesgirls. It will thus be seen that the process of determining a standard is clearly separated from the process of marking each girl by that standard. Each determination is arrived at by representatives of the people concerned and on the basis of the best available scientific information. The possession of these facts and this method of procedure make it essential that the determining board—namely, the representative body—should have the final say rather than the experts of the research department. We find in industry what I believe you may well find in hospital service—that, by this relationship between scientific fact and human representation of the parties in interest, efficiency and consent, or science and democracy, are continually revitalizing each other. They are always making science more scientific, both through its own advance and through the solid foundation it builds to insure its widest, uninterrupted, and ever more and more progressive use. It may seem that I am undervaluing the importance of science—I am not. I am merely keeping in mind that the true scientist is not the man who knows, but the man who is always questioning. The minute a man knows he merely becomes a propagandist for a stage of development instead of for development itself.

### VI. THE EXECUTIVE BOARD

If we are, therefore, to build up the executive board of a hospital (chart VI) in the soundest known manner, we must develop it out of a board which we would call the organization board. That organization board would contain a separate human representative for every one of the elements of hospital service, as shown on chart V. After the organization board has thoroughly studied all the jobs in the hospital, the executive board may be made up of a smaller number of men. As we have seen, a prime duty of the executive board is to have prepared and kept current a description of every element of service in the hospital and of every job under each element. The executive board will thus have before it all the time the best scientific information on which to exercise its representative capacity. The director, as chairman or secretary of the executive board, will find himself increasingly in possession, on a democratic basis, of knowledge and power such as an autocrat at his zenith ever wields; and because of the equal rank of the social and scientific functions, the good of the patient will become and remain the goal, as it should be, of hospital service.

### VII. CONCLUSIONS

I have tried to analyze some possible applications to a hospital of the general principles of organization, and the tentative conclusions appear:

First. That the hospital should get itself down in writing—its purpose, its policies, its functions, and all its work. It was in the hope of suggesting one line along which this description could be effectively done that this paper was prepared. If anyone of you now cannot better my analysis a lot, you are not alive. The moment you start, you will see how you can, for nothing is so unsettling to our customary notions as job analysis.

Second. You cannot have efficiency in a hospital unless you work out some intensively organized form of representative government which shall include every element of hospital service.

Third. You must tie up this representative government to scientific research work dealing with job analysis, for otherwise you will have neither efficiency nor democracy; or, to put it in the most complex and paradoxical form I can, unless you have both efficiency and democracy, you will have neither.

Finally, we must guard, above all else, from making a fetish of the forms of organization. The application of the latest developments of the science and art of organization should be a matter of course in anything so vital to the world's progress as the hospital. It should be remembered, however, that organization is not a rigid or mechanical thing, but a flexible and living thing. It is, in essence, only men and women in living, pulsating, growing relationships to knowledge, to skill, and to each other. No one can afford to feel that he can settle into routine, or that he can arrange his duties like pawns. In a true organization every member is living on adventurous frontiers. In the laboratories all senses and minds are straining into the dark for light, and at the side of the patient the doctor and nurse and hospital social worker fight battles that demand the highest powers of human beings at utmost stretch, whether the great game be to win a few more heart beats until a crisis be passed, or, patiently and without relaxation, to follow a minute routine through long, monotonous days.

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One of the largest hospitals of its times was founded by Bishop Masona in Merida, Spain, about the year 580.

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## A Shortsighted Policy on the Part of Hospital Trustees and Hospital Superintendents

The purpose of the American Hospital Association is the promotion of economy and efficiency in hospital management. There are over 7,000 hospitals and allied institutions in the United States and Canada, all of which are struggling constantly to make revenue cover expenses and to increase efficiency. Why is it, then, that less than 1,000 of these institutions are represented in the American Hospital Association?

There is not a trustee, superintendent, physician, surgeon, or superintendent of nurses connected with any hospital who would not derive benefit from membership in the Hospital Association and attendance on its meetings. It matters not whether the institution be a hospital for the insane, a tuberculosis sanatorium, or a general hospital—there are many problems in common.

Trustees are, for the most part, busy men, with other chief interests. The physicians, surgeons, and superintendents of nurses have their own societies, which mean more to them than membership in the American Hospital Association. Therefore, those mostly concerned should be the superintendents.

Every man or woman at the head of an institution owes it to himself and to his position that he keep himself as well informed and as efficient as possible. One of the best ways to do this is to meet now and then with others who are engaged in similar work, to listen to discussions by those who are able to present the best thought of the time on the various phases of institutional work, to discuss with others individual problems, to answer as well as to ask questions—all of which tends to broaden one's viewpoint and sometimes to make one less discouraged, or perhaps less assured. At least it enables one to value oneself and one's work more accurately.

Membership in the American Hospital Association and attendance on its meetings offers just that opportunity, and yet the vast majority of hospital superintendents are not members. There are apparently many who do not feel the need of a broader point of view, or of knowing what is going on outside their own little worlds. Such a policy is narrow and shortsighted.

There are many, however, who want to know what others are doing, who want the opportunity of learning how others are dealing with the many problems which are so perplexing, but they do not feel that they can afford the time if it is to be counted against their vacations, which they need so much to keep them fit for their work. This is where hospital trustees are shortsighted. They should expect—indeed, they should insist—that their superintendent be a member of the recognized hospital association and attend its meetings, or that some representative of the hospital should do so. They should consider that the small sum spent to send him to such meetings is a good investment, as it undoubtedly is.

Doubtless many trustees have never thought about this matter and naturally the superintendent hesitates to speak of it. It is hoped that many trustees will read this and act accordingly. It is also hoped that many superintendents may be stimulated to the realization that there is still something to learn, or that perhaps they have something to give to others in the interests of hospital progress.

Let this also be an appeal to the members of the American Hospital Association. You know how you have benefited; then pass the word along. Every member is asked to make a special effort to bring in one new member. Let us try to make the association more representative in order that we may all get a wider knowledge of what is going on in our field of endeavor, and that, by its larger membership, our association may contribute more generally to hospital progress.

WINFORD SMITH,
President American Hospital Association.

### Concentration of Health Agencies

Someone has recently said that the most insidiously hurtful thing in the social life of our time is what we generally know by the name of charity. It is very certain that a great many of us find pleasure in rolling the smooth-sounding word off our tongues; we salve our conscience with what we call doing charity, and too often we attempt to buy our place in the world by doing what we sometimes even make ourselves believe is charity. But there is an immense amount of humbug and hypocrisy about it all, and very often by the time it reaches its beneficiary the mask is off and it shows itself in its true light—namely, a species of self-praise and boasting, and only another form of self-advertising.

Some day this is all going to stop; there will be no charity—in the sense of giving somebody something for nothing—and what will be recognized as mere human justice, mutual obligation, will take its place. Socialism must go at least that far. When that time comes, and it seems to us not so far off, individuals will not think of going into their own pockets for pennies to feed a hungry child or to relieve an old and helpless man who has been overtaken by misfortune; they will bring the case to the attention of the constituted agencies of the public charged with such matters.

We are doing more in this direction even now than a first glance would indicate; we refer to the municipal farms that have been created in some of the cities. The largest and most highly developed of these is the Cooley Farm of Cleveland, Ohio, a farm of 2,000 acres, housing at the present time all the city's indigent aged, most of the tuberculous, the convalescents from the city hospital, and the petty offenders, who elsewhere are in the "Bridewells," "workhouses," and "chain-gangs." Philadelphia has its Bybury Farm of 1,100 acres fifteen miles out of the city, a very beautifully rolling country, where anyone could be happy. Milwaukee has its Wauwatosa of 1,000 acres just on the outskirts of the city, on which are all the city's so-called eleemosynary institutions, a general hospital, a tuberculosis institution, an orphans' home, a home for the aged, and an insane hospital.

Milwaukee has made some very rapid strides in its public health service recently, and bids fair to make vast progress in the next few years. It is this Milwaukee situation that is the inspiration for this writing. Up to a year ago there were seven distinct boards of trustees, each absolutely independent of all the others, and each one in charge of one of the above-mentioned institutions. In addition, there was the city health department, charged with the sanitation of the city and the hygiene of the people.

But the health department, while responsible for the down-and-out that happened to fall in the street, the accidents, and those particular cases of squalor and misery that need immediate relief, had no control whatever over the institutions whose services might be requisitioned for this relief, and no one of the institutions needed to concern itself about anything excepting its own narrow sphere. As a matter of fact, it was the routine practice of these several hospitals to decline cooperation with all the others, so that if an insane case, for instance, developed in the city hospital, it became almost impossible to get the patient into the only institution that could take proper care of him.

Each of the institutions had its own purchasing agency, and a steward's department that might easily have bought supplies for all the institutions served only the one. As a result Milwaukee's public health agencies cost the city $750,000 annually, and there were so many hindrances to efficiency that more than 50 percent of the necessary work was left undone on account of its great cost, and what was done was prohibitive in price.

A year ago a bill was presented to the Wisconsin Legislature to concentrate all these health activities under a single commission of three, all-time salaried members, who were to be paid enough to attract men of high capacity. The bill passed, and on October 1 last went into effect, with the first commissioners in office. It makes no difference how the commission is getting along with its work—the whole scheme is new, politics must undoubtedly be served in the beginning, and the commissioners will have to learn their lesson; but the principle is correct and will succeed, and this same principle of concentrated, homogeneous effort must be practiced in every American municipality before the greatest amount of public health work can be accomplished with the least overlapping, and consequently with the least expenditure of time and money.

In Milwaukee now no case could come up that could not be instantly and efficiently handled. Any sort of sick person can be sent at once to that particular institution best fitted to meet his needs, and any case can be instantly transferred from one to another institution; and, best of all, the health department, also under the commission, can have a perfect freedom of action in relieving distress and doing the right thing in all cases, which under the old system was impossible.

### Our New Department of Dietetics

With this number of THE MODERN HOSPITAL begins a department of Dietetics, which is to be conducted by Miss Lulu Graves, dietitian Lakeside Hospital, Cleveland.

Miss Graves will not have to be introduced to the readers of THE MODERN HOSPITAL. Most of us have followed carefully a recent course of papers which she gave us on "Feeding the Hospital." These papers were so popular and attracted so much attention, and reprints of them were called for to such a great extent, that the whole series is now in course of preparation by THE MODERN HOSPITAL and will be issued presently in book form.

The feeding of the sick has been a science now for some years, and it is one of the most intricate and useful forms of therapy. Special feeding has almost taken the place of drug therapy, and its importance cannot be overestimated. It is Miss Graves' intention, in the conduct of this new department, to keep before the hospital people, and especially the dietitians in the institutions, the best practice in dietetics, methods and means by which medical orders can be effectively carried out for the feeding of the sick, and a large part of her work will appertain to the business of the kitchen, the purchase, selection, preparation, and the various combinations of food to meet scientific medical requirements.

It is not the purpose of THE MODERN HOSPITAL in inaugurating this new department to enter the lists as a knight errant in the stirring field of food exploitation, but rather is it the purpose to try to help the dietitians in our hospitals, and hospital administrators themselves, to get a better view of the principles of the modern feeding of the sick; and at the same time it is the purpose to try to acquaint members of medical staffs with the physical limitations in the hospital and help them visualize conditions there, so that they may get the largest amount of usefulness from their institutions for the benefit of their patients.

It will hardly be possible for THE MODERN HOSPITAL to accept responsibility for a department of such importance as this without also accepting responsibility, in a measure at least, for various food commodities that are marketed to the hospitals and allied institutions; but we have already been seriously engaged in this field through the medium of the papers that have been prepared by Mr. John Phillips Street and published from month to month. These papers have already received the highest commendation, and that they have made a deep impression where they will do the most good goes without saying.

The installation of a department of Dietetics comes now on the heels of and in response to the demand for a better, clearer, and saner knowledge of food problems in our institutions, stimulated by the writings of Mr. Street and the series of papers by Miss Graves.

We bespeak for Miss Graves the greatest possible encouragement in her difficult task; it is to be a difficult task, and one fraught with perplexities —thankless, as all pioneer work is thankless—and we certainly hope that Miss Graves will have the cooperation of dietitians, administrators, trustees, medical staff members, and nurses who are interested in the problems that she will try very hard to help solve.

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### Dr. George Howard Malcolm Rowe

Dr. Rowe died at his home, 11 Ivy street, Boston, on January 30, 1916, aged 75 years.

He was born in Lowell, Mass., February 1, 1841, of excellent English-Scotch ancestry. He received his preparatory education at Berwick and Phillips-Exeter academies. Dartmouth College conferred on him the degree of A. B. in 1864 and A. M. in 1867. He was graduated by the Harvard Medical School in 1869. His clinical work was almost entirely in connection with the insane, although his first position was the superintendency of the Massachusetts School for the Feebleminded. This position he left in 1870 to become the assistant physician at the Pennsylvania Hospital for the Insane. Later he was assistant physician at the Hartford Retreat, and thence he went to the Boston Lunatic Hospital as assistant physician and assistant superintendent. He was just ripening for a great work among the insane of Massachusetts when he was called to the superintendency of the Boston City Hospital in 1879 by the resignation of Dr. Edward Cowles, who took the superintendency of the McLean Hospital. He remained at the Boston City Hospital until 1908, when he resigned because of failing health. He was never married.

One can hardly think of the Boston City Hospital without thinking of Dr. Rowe. Three-quarters of it, as it stands today, was constructed under his superintendency, and very largely under his personal direction. Among the multitude of additions and alterations, mention may be made of the following: South Department (seven buildings) for contagious diseases; the Burnham Memorial Building; Relief Stations in Haymarket Square and in East Boston; three homes for nurses; pathological building, with mortuary and chapel; new surgical buildings, with operating rooms; new amphitheater; medical library building; convalescent home; x-ray department; out-

patient buildings; power house; ambulance station, and many others.

The South Department shows what Dr. Rowe could have done in building a new hospital from the start; the present-day amphitheaters and operating departments show what he could do in adapting the new to the old; but his ability as an organizer and administrator was never better shown than by his services in organizing the tent ward for the soldiers during the Spanish War. Here was a complete hospital in itself, formed on a few days' notice and organized without overlooking a single detail.

As a hospital superintendent he was an investigator. Nothing concerning the construction of hospital buildings escaped his notice. His contributions to the literature of hospital administration are marked by a high degree of excellence. It is hard to imagine a better exposition of the function of the trustees and the superintendent of a hospital than that given in his "Observations on Hospital Organization," presented at the fourth annual meeting of the National Association of Hospital Superintendents at Philadelphia, October 14, 1902.

DR. GEORGE HOWARD MALCOLM ROWE.

In 1911 he was placed on the retired list of fellows of the Massachusetts Medical Society, having been a councillor from 1895 to 1909.

He was a fellow of the American Medical Association a member of the American Health Association, the Boston Society for Medical Improvement, and the American Medico-Psychological Association. He was at one time president of the Association of Hospital Superintendents of the United States and Canada. He was a member of St. Botolph, University, Eastern Yacht, and Beacon clubs.

He was of great assistance to the young superintendents in the surrounding cities. A letter written to him on any subject in connection with hospital management brought forth a surprisingly rounded out thesis on the subject.

Of late years Dr. Rowe has been much missed by the Round Table Hospital Club, a dining club of hospital superintendents, sometimes called Dr. Rowe's Round Table. He was the principal mover in the formation of it, and was its guiding spirit until he retired from duty at the Boston City Hospital. He was a man of wide culture, fond of music, a good organist, and was well versed in the best literature of the day.

On his resignation at the close of his service, the trustees of the Boston City Hospital, in their public acknowledgment to him, said:

> "After thirty years of faithful, continuous service you have the consciousness of having achieved that high standard of efficiency which places you in the front ranks of hospital superintendents in this country."

This statement says too little rather than too much. Much might be said of his private benevolences, but he never mentioned them himself, and we respect his reticence. H. B. HOWARD.

### Hospital Lessons of the War

The United States navy has just issued a report, made by Surgeon A. M. Fauntleroy, on the "Medico-Military Aspects of the European War."

This report is an epoch-making document; it is not only an intimate analytical treatise on medical, surgical, and hospital progress, as exemplified in the European war, but it represents a piece of enterprise on the part of the medical organization of our navy that cannot be too highly commended.

Nearly every war within the past hundred years has marked an epoch in medical and hospital practice. Those of us who still remember our history well enough to know about the Crimean War associate that historic epoch with the work of Florence Nightingale in the care of the sick. The great American Civil War of '61-'65 brought new surgical methods, new medical procedure, and new ideals of nursing and care of the sick prominently before the world, and, while Florence Nightingale, one woman, did a vast amount in the Crimea, her service was largely that of a leader and teacher of methods rather than as an exponent of uniform and routine practice, and it was not until our Civil War that the teachings of

Florence Nightingale took on physical form and grew into standards of practice.

Then came the Franco-Prussian War, and a new impetus in hospital service and medical practice, the Russo-Turkish War, the Russo-Japanese War, and the Boer War.

Especially did the Russo-Japanese War mark some definite achievements, notably in surgical practice, the care of infections, the transport of the sick and wounded, the surgery of shell wounds, especially incident to explosive shells. In all these directions were vast strides made during that memorable contest.

But even since the last consequential war, changes have come about of very great moment to humanity, and especially in medical and hospital practice during war; indeed, within the past five years typhoid vaccination has become a standard practice, and the almost criminal fatalities of our own Spanish War can no longer occur; and, perhaps even more momentous, the cause and prevention of typhus have been discovered and have gone into definite practice, notably in the Balkan disturbed area.

Now comes on the greatest war of all history, and it comes at a time when great scientific truths in medicine stand half revealed and still half hidden from view. From time to time, during the progress of the present war, some faint echoes of great scientific events occurring on the battle lines have come to us, but only in fragments and not in such a way as would serve any very constructive purpose. Not only that, but from time to time we have been told that the warring factions had declined to allow American observers to peep behind the scenes and to study methods and processes and practices. We had even been told that the medical services of our governmental departments had been refused passports to the war zone.

And now on the heels of this information comes Dr. Fauntleroy's report. It is a volume of only 150 pages, a large part of which is made up of illustrations; illustrations of methods of transport of the sick and hurt, of apparatus and equipment for hospitals, and for diagnosis and treatment; plates showing individual wounded, the terrible destruction of tissue, and progressive plates of some of the worst of these cases, showing the end results with evidences of repair almost beyond human comprehension; pictures of men whose whole faces have seemingly been torn away and who got well with hardly more than a scar or two. These plates show also splints and dressings for various fractures and various wounds, and, strange as it may seem, and while American surgeons and American physicians occupy numerically so inconspicuous a place in the European war, many, very many, indeed almost all the new devices which Dr. Fauntleroy pictures, are the design of American physicians and surgeons.

As we have said, our Navy Department is entitled to the highest commendation for its energy and enterprise in conceiving and carrying out this piece of work, and in the selection of so thoroughly capable a representative as Dr. Fauntleroy to put it into execution. But it is conceivable that Dr. Fauntleroy's report may not fall into the hands of very many hospital people or of any considerable number of the American medical profession, and, even if it did, it is such a mass of matter that much time would be involved in a study of its various parts.

But there is too much in Dr. Fauntleroy's report that makes it of vital interest and profit to the hospital people for us to pass over the report with a mere mention, and the surgeon-general of the navy, General W. C. Braisted, has been most kind in permitting THE MODERN HOSPITAL to use many of the illustrations that were made for Dr. Fauntleroy's report, and the surgeon-general has kindly consented that an epitome of the report be made for publication in THE MODERN HOSPITAL in three numbers.

The first part of the report, which is published with illustrations in this number, concerns new splints, new apparatus, new dressings, and new methods of treatment of the wounded. There should be some most illuminating lessons in this story, and it ought to be the means of initiating many new practices in American hospitals.

The second story will concern the various methods of transportation of the sick and hurt from the fighting line back to the base at home. This story of transportation is of special moment just now when American hospital workers, administrators and trustees, and staff members are thinking about the transport of our own sick, not for time of war, but in peace, when we are thinking about convalescent homes in the country, when we are thinking about the location of acute disease hospitals far away from the noisy, dusty streams of traffic, where the sick can have the benefit of pure air, sunshine, the green trees and flowers, and good foods, milk, eggs, vegetables. Perhaps the European war has solved that problem for a generation to come. This story will be published in the May number of THE MODERN HOSPITAL.

In the June number there is even still more profitable and instructive a story—namely, that concerned in the equipment of hospitals; some of the illustrations show a small group of transport wagons wandering along the road, and, presto! the next picture shows a hospital built from the contents of these wagons; the electric light plant,

the operating room with all its paraphernalia, the housing for the patients, their laundry and sterilizing apparatus, and one picture even shows a portable shower bath established where a dozen or forty soldiers can be given simultaneously a warm shower bath preparatory to putting them to bed.

A good many of us have sometimes felt that the complexities and the technic of our hospital operations are growing topheavy; indeed the statement has been made to this effect many times in THE MODERN HOSPITAL. Only recently, commenting on the proposal of a member of a surgical staff of a hospital that seven or nine people were required in the performance of a surgical operation, it was stated that perhaps a great war would yet be needed before American surgical procedure could be reclaimed and reestablished back in the simplicity out of which it has wandered so far.

And, then, when we see how little material and how little apparatus and how little housing there need be to care for vast armies, and to care for them in a measure of efficiency never heretofore attained, we wonder if, in spite of the dreadful slaughter, the millions of deaths, and the infinite suffering and distress and heartaches, time shall not prove that the war was worth all it is costing.

### Moving Sidewalks and Other Luxuries

In Mr. Davis' department of Dispensary and Out-patient Work this month there is a little article highly facetious in tone on the reception and care of dispensary patients with moving sidewalk appurtenances and other essentials of modern comfort or luxury.

Perhaps the facetiousness of Mr. Davis' contributor would be regarded by some as its only value, but in reality there is food for thought in the article. To what extent are we catering to the comfort, even the necessities, of the sick who visit our dispensaries? How many of us have gone into clinic rooms at odd hours and have seen there great groups of waiting sick people occupying straight benches, with pinched faces, tired, sick-looking bodies, and with an expression of listlessness sufficient to shut out almost every acute sensation?

When are we coming to a time when the sick poor, on their visits to the dispensaries, shall be given the consideration to which sick everywhere else seem to be entitled? Almost no attempt seems to be made to cater to their interests by giving them prompt treatment and allowing them to go home, where they can lie down.

Perhaps Mr. Davis' contributor had nothing else in mind but the entertainment of Mr. Davis' audience, but who shall say how much good this article might do if it should be the means of stimulating study and thought on the part of those interested in dispensary work?

### VALUE OF OLEOMARGARINE

#### British Hospital Authorities to Feed Substitute Butter to Patients While Experts Argue

The Wandsworth Board of Guardians, following the lead of many other public bodies, has decided to supply the patients in their infirmaries and the officials with margarine in place of butter. The board was influenced in its decision by a report from Mr. A. H. Muter, public analyst for Lambeth and Wandsworth, who reported that there was very little difference in the amount of fatty matter and in the assimilability of the two substances. A comparison of the two is complicated by the fact that the word "margarine" is applied to many substances of different composition. As defined by the Margarine Act of 1887, margarine is the name given to "all substances, whether compounds or otherwise, prepared in imitation of butter, and whether mixed with butter or not." Margarine today is made chiefly of vegetable fats, such as cocoanut oil and palm-kernel oil, mixed with separated milk, and artificially colored. The result is a product which, in the case of the best margarines, cannot easily be distinguished, either by the eye or by the palate, from butter. As to its value as food, there is a sharp division among medical authorities. Dr. James Oliver says that vegetable fats are less digestible than milk fat, and that they deprive the body of calcium salts by forming in the intestines calcium soaps, which cannot readily be utilized. Butter is also said to contain phosphorized fats, which margarine does not. On the other hand, Dr. Robert Hutchison asserts that 102 pounds of margarine are equal in nutritive value to 100 pounds of butter, and that it is practically as well absorbed as butter, but there is no deprivation of calcium, because calcium is always in excess in any dietary, and that the amount of phosphorus in butter is negligible. Another objection that has been raised is that, owing to its method of manufacture, there are no vitamines present in margarine, while butter contains them. The advocates of margarine point out, however, that vitamines can easily be supplied in other articles of diet. Most medical men will agree that the opponents of margarine fail to prove the essential superiority of butter, and that, having regard to the greater cheapness of margarine, its substitution for butter in institutions is perfectly justified. The latter statement, however, requires three qualifications—the margarine supplied must be of the best quality, the medical officer must have power to order butter in special cases, and the dietary must be of such a character as to insure the supply of an excess of calcium salts and the presence of vitamines.—The Hospital (London).

Plans drawn by Architects Rose & Peterson, Kansas City, Kas., for the proposed Jasper County (Mo.) Tuberculosis Hospital, for which a $100,000 bond issue has been voted, call for a two-story and basement main structure, 250 by 60 feet, with a rear projecting wing 40 by 50 feet. The construction will be of reinforced concrete, masonry, and tile. On one side of the building there will be two pergolas, with a combined length of 125 feet. The equipment will include portable baths, a laundry with sterilizing apparatus, and a refrigerating plant. The hospital will have a capacity of 126 beds.

## SURGICAL DEVICES IN THE WAR

### Splints, Irrigating Methods, and Magnet, Reported by Surgeon Fauntleroy of the Navy

Very often when we go visiting a new hospital we see new appliances, new practices, new technic, and we hear glowing accounts of how beautifully it is working out; the superintendent himself will be enthusiastic about it. We make a mental memorandum of the device or method, and when we go home we attempt to put it into practice in our own institutions, only to promptly find that it is wholly impracticable and cannot possibly be worked. A little later we make some inquiry of the hospital in which we originally saw the device or method, and find that there, too, it is out of commission and had evidently proved unworkable.

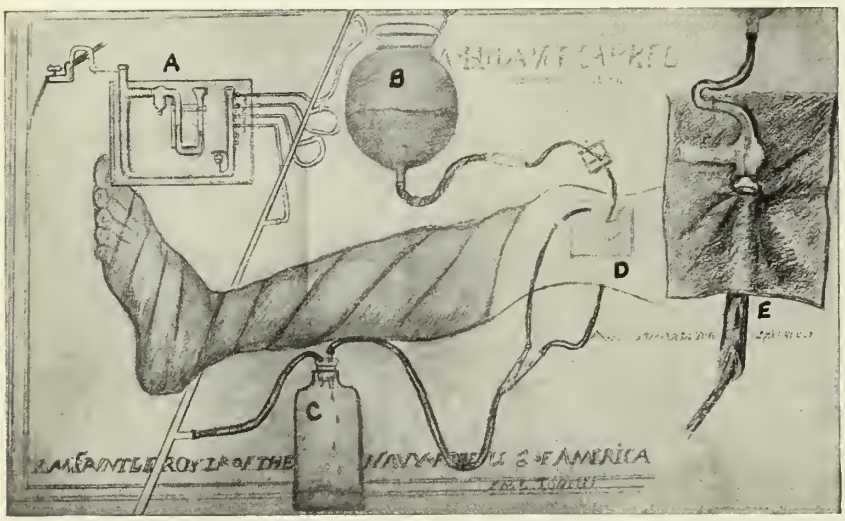


Fig. 1. Combination continuous irrigation and suction apparatus.

Every hospital in the country has a lumber room stored full of unusable, obsolete, impracticable apparatus, stuff that has cost large sums of money and an immense amount of time and ingenuity on the part of doctors or administrative officers; that is what we call hospital junk, and we store it alongside of broken beds, broken screens, and old, unused chairs.

It has been said that not one device out of a hundred that is put into practice in the average hospital works out so that it becomes standardized for general hospital practice. The great trouble with all these things is that they are shown and demonstrated to outsiders and visitors under the most favorable auspices, and are introduced as articles of every-day routine practice when in reality they are only in the first experimental stage. The superintendent who sees such a device in use goes home and copies it and sets it to work, and exhibits it to others with the recommendation that he got it at such and such a place, where it has been in use a long time; and so the unworkable and impracticable things continue, and it is only after long and hard use under exacting conditions, and for the most intensely practical purposes, that a device or a method can finally be determined as a standardized piece of hospital machinery. It is extremely fortunate, therefore, that in the presentation of his report to the United States Navy, and thence to the American medical profession and the American people, Dr. A. M. Fauntleroy, surgeon in the navy, who was sent abroad to make observations and report on the medico-military practices incident to the European war, was able to bring back some eminently practical things.

In connection with this article are some illustrations of splints and other apparatus, instruments and devices for the treatment of the sick and wounded, that are now being employed on the battlefields of Europe, and that have come into standardized practice because they are meeting a demand for the service of the sick and hurt where hundreds of thousands of men are passing through the hospitals. These things that Dr. Fauntleroy reports on have ceased to be experiments; they have been accepted for the extreme purposes of war, and consequently have been found to be convenient, economical as to time and energy, and have actually and practically served the purposes for which they were designed.

The illustrations almost tell their own story, with the legends accompanying them, and almost nothing further need be said to illuminate the instructive and impressive report that Dr. Fauntleroy has made, which would have been complete if only the illustrations themselves were used, and even if there had not been a word of the brilliant running account of what Dr. Fauntleroy saw in Europe concerning the medico-military usages in the war.

There are a few things, however, to which attention might be called. One of these is illustrated by Dr. Fauntleroy in Fig. 1, a combination continuous irrigation and suction apparatus which is in constant use in Dr. Carrel's

Fig. 2. Electric vibrator and magnet.

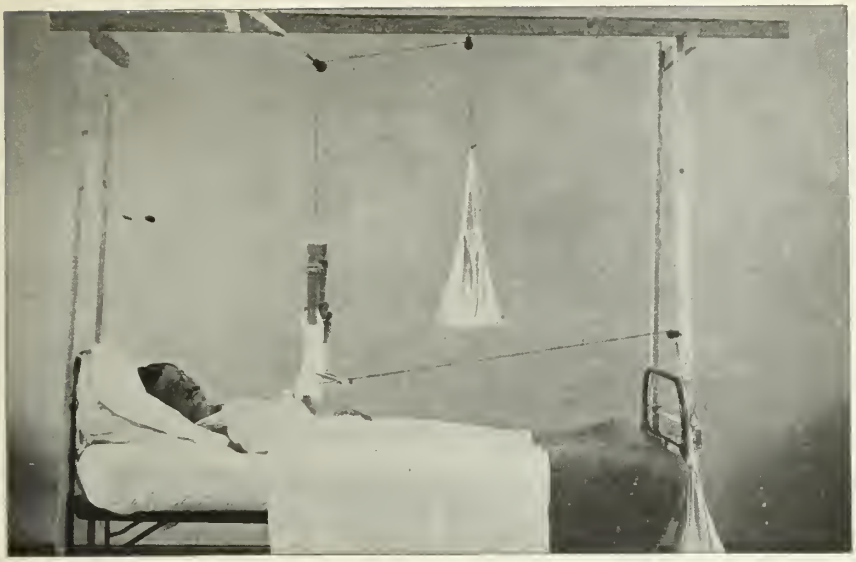

Fig. 3. Suspension apparatus for fractures and wounds.

hospital at Compiegne. This apparatus is used more particularly in the sterilization of certain perforating wounds of the extremities. The general principle of the apparatus is along the lines of through and through drainage, as Dr. Fauntleroy says, with the antiseptic entering by one drain and being withdrawn, with the septic wound secretions, by continuous suction applied to the other drain, which is placed dependently. In practice, Dr. Fauntleroy says the apparatus has developed certain manifest advantages; after it has been correctly applied, the wound does not have to be dressed again until the infection has cleared up, which is an important point. As carried out at the Carrel hospital, the wounds of entrance and exit are enlarged only sufficiently to remove any foreign material and to admit introduction of the two fenestrated drainage tubes into the depth of the wound; the wound around each tube is then completely sealed by rubber tissue glued with collodion; a thin layer of gauze is also glued with collodion over the rubber tissue to the skin, so as to reinforce the rubber tissue in sealing the wound. One of the drainage tubes is connected to a Murphy drip apparatus, while the other tube is connected by a long piece of rubber tubing to a large aspirating bottle underneath the bed. This bottle is continuously exhausted of its air on the same principle as the vacuum bottle in aspirating the chest by means of a special water suction apparatus operating perhaps at a distance.

Another piece of apparatus which has been standardized in the course of this war is the electric vibrator and magnet (Fig. 2). This apparatus was perfected by Professor Bergonie, of Bordeaux, and is not in practical use on the battle fronts. The vibrator, which is shown attached to the swinging wall bracket, is used to locate pieces of steel in the tissues during the course of an operation; one end of the vibrator is protected by a sterile towel and brought to within half an inch of the skin surface and the current is turned on; the operator's finger is held between the end of the vibrator and the skin; if steel is present in the tissues, it causes a well-marked vibration in the metal, and this vibration is imparted to the surgeon's finger, which is palpating the skin. The nearer the surface, the greater the vibration in the metal, and as the end of the vibrator is moved to or from the metal the vibrations increase or diminish, as the case may be. This vibrator produces no effect of shrapnel balls, which are made of lead, but it has been found extremely useful in determining the pressure of or locating a piece of shell or jacketed bullet where the x-ray picture is not clear. The magnet, which is provided with suitable steel tips, is especially applicable for extracting small pieces of metal, except lead, from certain inaccessible parts of the body, such as the brain, neck, or chest; in these localities it would require a formidable operation to remove the metal by incision and dissection. In case a piece of metal is located at one of these sites by the x-ray, the patient is anesthetized in the x-ray room, and there, with the aid of the fluoroscope, the operator can introduce one of the various steel tips, which has been previously sterilized, into the original wound until it can be seen to touch the piece of metal; when the operator is satisfied that the steel tip is touching the metal, the patient is wheeled into the operating room with the steel tip carefully held in position, and the electromagnet is swung over the steel tip until it touches the latter. The current is then turned on, and this, of course, converts the steel tip into a strong magnet. The tip then being gently withdrawn, the foreign body comes with it. As shrapnel is very seldom used at the present time, Dr. Fauntleroy suggests this vibrator or magnet can be used practically for all pieces of projectile in wounds except a lead bullet which has lost its steel jacket.

Fig. 4. Ambulant splint.

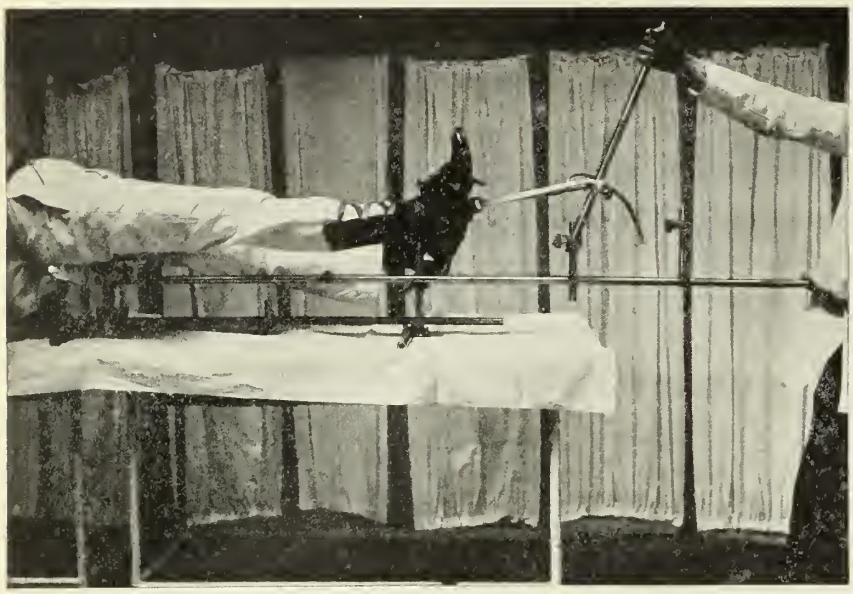

Fig. 5. Extension apparatus.

Obviously this apparatus in a general hospital would be most useful.

Another most interesting point in Dr. Fauntleroy's report, which, however, is not amenable to illustration, is that of the new disinfectant devised by Dr. H. D. Dakin, of the Herter Laboratory, New York city. Before he succeeded in finding a practical disinfectant for battle field purposes, Dr. Dakin had compounded for trial and comparison 130 different chemical antiseptic combinations. The one which was finally successful, and which has been adopted as the superior antiseptic of the war, is described by Dr. Fauntleroy as follows:

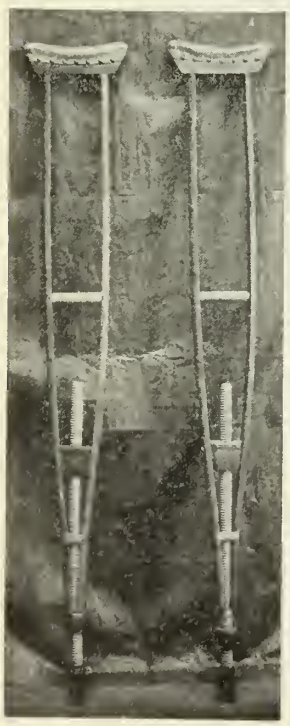

Fig. 7. Adjustable crutch.

Dissolve in a large bottle 140 grams of dry carbonate of soda with 10 liters of sterile water; add to this 200 grams of chlorid of lime and shake well; after half an hour syphon off the clear fluid into another bottle through a cotton plug or filter paper, and then add 40 grams of boric acid to the clear filtrate; this solution is neutral to litmus, is nonirritating, and is the proper strength for wet dressings and irrigations. A stronger stock solution of 4 percent may be made, but the quantity of boric acid to be added must be determined exactly, so that the solution is just acid to phenolphthalein suspended in water; otherwise the solution decomposes rapidly. The solution should be made fresh every three or four days, and the dry stock ingredients should be kept in covered receptacles. Dr. Fauntleroy suggests that, besides its proved efficiency, this disinfectant can be made up, even in small amounts, at a cost of only about 5 cents for 10 liters.

Since the time of the Hodgen thigh fracture splint, devised by the late Dr. John T. Hodgen, of St. Louis, about 1880, the continued suspension of fractured members has been accepted surgical practice, but the various devices for suspension have always given an immense amount of trouble in hospitals. The practice of using suspension apparatus has never been popular in some institutions, and even some well-known surgeons do not employ suspension apparatus in their cases, avowedly for the reason that they cannot get proper cooperation in their hospitals. But this war has developed that suspension apparatus is not only practical, but necessary, where a large quantity of routine work is to be done. Fig. 3 shows one of these suspension devices in operation for treatment of a fracture at the middle third of the humerus. Dr. Fauntleroy shows a large number of these suspension devices employed in various fractures and wounds.

Fig. 6. Ambulant leg splint.

Not unlike the suspension apparatus in principle is an ambulant splint shown in Fig. 4 and devised by one of the surgeons connected with the Harvard unit. This ambulant splint permits patients to walk about even from the first, so that they may regain their strength while the wound is healing.

American hospitals have been hard put to it many times for an apparatus to employ extension during the process of putting on casts, especially in fractures of the thigh and leg. Fig. 5 shows a device of this sort, and the report states that it is eminently satisfactory, quite simple, and is in common use.

Another device which is made to take the place of plaster casts in some cases is shown in Fig. 6, the Thomas ambulant leg splint, the metal parts of which are made to take the weight of the body so that the fractured part can have complete rest even while the patient is going about.

A device worthy of special attention is the German adjustable crutch shown in Fig. 7. This crutch can be accommodated to a tall or short person, and can also be accommodated to the early stages of convalescence, or to a later stage when the patient is entirely well, and the full length of crutch can be substituted for a shorter device.

## THE SOUL OF BATTLE CREEK[1]

### The Famous Institution Preaches a Gospel of Right Living —Food Only Part of the Creed

So few of us form our opinions on the facts which we observe for ourselves that we lose confidence in our own judgment. The world's progress has always been retarded by our fear of being mistaken and laughed at. The prejudice which enslaves the average man's judgment is not necessarily wicked or intentional, but it is none the less real, so that it is too true that "a prophet is not without honor save in his own country." Galileo faced it when he launched his protest against a flat earth, Harvey when he taught the circulation of the blood, Lister when he showed the value of antiseptics, Jenner when he pleaded for vaccination, Morton and Simpson were bitterly attacked when they conferred the inestimable gift of anesthesia on the human race, Fulton was maligned for claiming that ships would one day be driven by steam. The slogan of "safety first" forced now on one's notice at every turn, seems silly, in the first place, as being unnecessary, but it has come to stay, and the slogan of "health first" also, as the pure food acts, the factory acts, and the laws against spitting attest.

It has been my lot in life to live alternately among the very poor and the very rich. I have many times seen starvation from inability to obtain food, and I expect to see again the starveling mother and babe, the brilliant, deep-sunk eye, the wasted and enfeebled frame of the bread-winner, hopeless and helpless. I have seen the starvation due to ignorance, the black leg, the swollen limbs and bleeding mouths of people dying of scurvy, with vegetable salts procurable right alongside of them—their value all unknown. Hundreds of times I have seen young and old suffering the agonies of beri-beri and its subsequent paralysis, though the cause was of their own making, and the cure in their own hands. In these cases the facts are simple, and the deductions leave no room for prejudice.

When, however, one returns to civilization, and faces the modern menu cards side by side with the new health propaganda, one merely wonders how any protest can possibly be taken amiss. The newly arrived Westerner, who for the first time faced an up-to-date hotel or Pullman car menu, is reported to have more than eloquently sized up the situation by saying, "Just fetch me fifty dollars' worth."

After my first ride on the top of a bus down Fifth avenue, my observations of the dresses which were the last word of the fashions of the great city left me at first with a sympathetic feeling akin to that which I had felt for the involuntary infraction of nature's food laws which had faced us in Labrador, for combined with the humor of it there was such a strong element of pathos—especially in a country protesting against the shoes of Chinese women. No doubt the ancient provisions and traditions of English schools and universities leave them open, as are so many human things, to criticism; but of late years even France and Germany have been testifying by the very strenuous efforts to emulate them that the emphasis on *mens sano in corpore sano* is a fundamental of the Englishman's faith. The ideal of the Anglo-Saxon youth is the physically fit man.

Most willingly I concede that in the battle with intoxicants America occupies an entirely admirable position. She has also coined a new word in honor of a citizen who *chews* his food. The law of demand and supply has conferred on her none too soon the unique protest of a Billy Muldoon, to rival in the "field" of overeating the achievement of yet another and more famous "Billy" in the "field" of fight against drink. Charles Dudley Warner propounded the conundrum, "How can a family possibly be respectably raised around a hole in the floor called a register?"

But it is a far more serious question, "How can a family be raised self-mastered around the temptation of modern meals?" For grim memories, such as the fat of Rome, rise specter-like to haunt the answerer. America's genius in catering to luxury is to us English on a parallel with much other overemphasis. It has, in physical exercises, undone her very Anglo-Saxon and right appreciation of the great value of sport. No experience in America puzzles the Englishman more than why so many should be contented to look on while so few play the games. I heard a certain well-known college president remark once, "Thank God, golf was invented in Scotland. If we in America had originated it, there would have been no bunkers, and most men would not have ventured to play at all."

Our admiration of the physique of an Apollo will be a real handicap to our cult of mental achievements so long as men's minds are obliged to accept the popular physical ideals of their professors of learning. A preacher, however eloquent, is increasingly discounted if his voice emanates from a self-indulgent physique. The disadvantage of a contemptible presence was realized even by St. Paul. My first visit to a millionaire's club left me a worshiper at the shrine of fitness, sincerely sorrowing for the "poverty" of the rich, more than ever appreciative of the nomenclature which classes an affliction largely on the increase under the head of "nervous prosperity," and ready to acquit of any Don Quixoteism even a president who went out of his way to pay honor to an apostle of the simple life.

The parable of the rich man and the needle's eye is neither new nor any easier of solution apparently than it was when first propounded.

"What is wrong with America?" is so often heard as a popular saw. No doubt plenty of young Romans, even in the last days of the Empire, yelled back, "She's all right." The English medical man is a Pharisee of the Pharisees in orthodoxy. The recognition of more than one school of healing suggests to the English mind only governments capable of attributing Tammany ideals to the noblest of professions. The first voyage of the Mayflower was the classic protest against wealth rule and wealth worship, no less than against soul-damning conventionalism.

Some years ago, while in Chicago, I received an invitation to visit and inspect the methods of the best-known simple food protest in America, known to the public as the Battle Creek Sanitarium. With an inbred hatred of cant and quackery, and thinking that the institution might be merely a means of advertising patent foods and a new sect called Seventh Day Adventism, I at first respectfully declined. Later, however, I decided to go, feeling that there must be some germ of good in a system which had produced such wonderful physical improvement in some of my personal acquaintances.

On the train a short, wiry, keen-looking man was introduced to me as Dr. Kellogg, superintendent of the sanitarium. Though well over 50, he had not a wrinkle in his skin, and was evidently, in English parlance, "as fit as a fiddler"—by no means the Stiggins, or medicine fakir, which prejudice had pictured him. When I turned in to

[1]This paper is published by special request of Dr. Wilfred Grenfell, who has been a frequent contributor to the pages of THE MODERN HOSPITAL.

sleep he was dictating to a secretary, and when I turned out again in the morning he was still dictating, presumably to another secretary. "Don't you ever sleep?" I ventured to ask. "Oh, yes, when I need it," was the cheerful reply. I have to admit since that his answer reflected the spirit of his teaching very truly. Eat when you are hungry and not because you are asked, or for convention's sake, is a fundamental maxim in his attack on food intoxication. Treating in drinks is today illegal in some districts. Treating in unnecessary and intoxicating foods is far from being considered hospitality at Battle Creek.

Every prophet or protestor makes enemies. I am inclined to believe that every successful protestor ought to expect and also be prepared to put an overemphasis into his message. Unconventionalism is looked at as much askance and treated as badly by the physician as by the theologian, or by the British matron. G. K. Chesterton's book, "Man Alive," was not written before it was needed. The assertion that a surgeon has no right to invent breakfast foods is almost a cardinal canon of medical lore. But the fact that Battle Creek food products have come as a benefactor to many digestions, and that Dr. Kellogg, so far as I know, has not any personal financial interest in the sale of any patents, has not yet altogether modified the offense in inventing them.

The Chinese pharmacopeia has forty volumes—that of the famous Massachusetts General Hospital only a few pages. Perhaps the most famous heart doctor in England has declared that the most notable virtue of so universally used a drug as digitalis lies in the fact that we doctors can scarcely give enough to do any harm; yet the declaration by Battle Creek that it dispenses almost entirely with all drugs is regarded with no little suspicion. Purely defensive culture is only just beginning to displace unpopular, offensive, "kultur;" yet what great abuse and cruel imposition has the freedom of America permitted to be perpetrated on her unfortunate people in the shameful patent medicine traffic. Even in Labrador our poor folk are robbed by the harpies who prey on the fears of ignorant humanity with such things as electric belts or swindling "cure-alls." On the small farms of the West even the unprotesting chickens and pathetic cattle have to swallow tonics and restoratives to make easy fortunes for unscrupulous vendors.

When I learned that the real name of the Battle Creek Sanitarium was the Michigan Benevolent Institution, and that it was exempt from taxation by state laws, that its governing body was a guarantee that it brought no money to any individual (a final seal to which fact was put by the unbelievers who brought a tax suit against the governors, which resulted absolutely in favor of the institution on every single count), while the special committee on examination reported, "the revelations made by our investigation have been a surprise to us; not only were we unaware of the wholly philanthropic nature under the law, but we were also unaware of the vast amount of charitable work performed by it and the wonderful sacrifice among its managers and employees; we are deeply convinced by overwhelming proofs of the straightforward management, lofty purpose, and widespread beneficence of the institution, and, above all, the personal devotion and sacrifice of nearly a thousand persons employed in it"—then the first revulsion in its favor occurred in my soul. The second came when I was absolutely convinced that it had no sectarian connection whatever; and the third when I realized that its slogan—whatever the success of its system—was simply, "right living," and that it neither advocated nor sold any panacea or proprietary nostrums whatever. Even if, when it came into existence, any other conditions existed, we have no reason or ground for complaint. Empiricism has preceded rationalism even in medicine. The origin of our own species was attended with very undesirable conditions. America, anyhow, should now be proud of the unique protest which this noble institution is making. It is an improved and successful "Brooks Farm" experiment. I was a proud man at the National Congress of Surgeons of North America when I saw the president and council of the new college of surgeons confer on Dr. Kellogg and his two principal colleagues the hall-mark of the Degree of Fellowship.

The fact is, the profession, as a whole, now recognizes everywhere the need for the unconventional for men like Dr. Richard Cabot, who saw that the social service wing was as vital and essential a factor for a modern hospital as an operating room or a dispensary. "Oh, he's a crank," a man said to me only the other day. "God bless and multiply them," was my reply. Just so the Church needs "cranks" like Elwood Worcester, whose protest that the interests of mind and body are so intimately intertuned that the Church must have a message for both if it is to reach the soul in its apostleship of things spiritual. Men like Bishop Sumner, who instituted the splendid move for eugenics in marriage; like Graham Taylor, of the vice reform movement in Chicago—these are the "men alive" who are simplifying the efforts to uplift humanity, regardless, like the great Master of all reforms, of men's attitude to them. They help us to avoid the burden of the sects and cults that are able to rise and fatten on men's foibles because of the element of unrecognized truth which their first founders fastened on.

The object of Battle Creek is to prevent ill health by teaching right living. But, alas, it has so often to deal with already disabled constitutions that it needs every possible accurate method of diagnosis to know exactly where to begin with each individual. The endeavor to incorporate under one roof every method of precision known to scientific medicine has been one reason for its enormous size. It simply stupefies one to see the small figure in white clothing in front of the huge pile, which one knows is as yet but a tiny part of the outcome of one man's energy and wisdom. Thorough in everything, even the white clothing is to let all available light through to the skin, in pursuance of the sunlight treatment so successfully exhibited by Rollier in Switzerland.

The Battle Creek roentgen ray outfit is as fine as any in the world, and the work of its roentgenologist, Dr. Case, is world famous. The painstaking thoroughness of his technic is unsurpassed in my experience. The work of the institution in heart circulation, aided by the newest and most accurate instruments, has enabled it to add no little to the due and just appreciation of "blood pressure" and its meaning, and the right interpretations of variations from the normal, and the effect of diet on it. The specialist in charge of the work, Dr. Mortensen, is recognized as one of the ablest of diagnosticians. The work in the surgical department needs no indorsement beyond the valuable monographs which have been contributed from time to time by Dr. Kellogg. His work on the ileocecal valve is entirely original, and personally I believe, in conjunction with accurate x-ray work, is destined to do much for the right appreciation of and treatment of ileostasis, and the real meaning of the varieties of kinks and obstructions which have led to the already declining practice of sidetracking the large intestine, so as to prevent the absorption of retained toxins, manifested in arthritis and other common ills of humanity. The first case of Fried-

reich's ataxia recognized in America was reported from Battle Creek.

The profession has no fear, and the public need have none, of the scientific ability of the staff. The purpose of this statement can be estimated only when one remembers the main and stupendous task, the inevitably unpopular task, ahead of the great effort. It is to rescue natural curative agencies from the hands of vampires, to persuade the world to depart from the food habits which it has cultivated and enjoys, to find out the means to make a simpler, cheaper, and less toxic diet possible for the man in the street. No doubt Jack, faring forth even against the giant who holds hodern maidens enslaved to fashions that impoverish their resources and deform their beauties, could not be beset by greater difficulties and dangers.

The first preparations for this warfare have been most efficient dietetic laboratories, and a sufficiently large staff of trained workers to adequately carry out the routine and tedious examinations of intake and output of food which the system rightly calls for in any given case. No more carefully prepared examinations, more laboriously maintained and continuously recorded, are available anywhere; and it has always seemed to me that if money can enable such intricate, individual equations ever to be satisfactorily obtained—such as what each person may and should eat, and how much and when, so as best to insure his living out his full life—it surely will be in Battle Creek, or in some as earnest an offshoot which shall proceed along the lines so carefully laid down and followed there.

It is no small compliment to one man if he had done nothing more than produce the universal dynamometer which has been adopted for anthropometric laboratories by the United States government and all the leading gymnasiums. It is interesting merely to name the laboratories which the institution has considered it essential to establish, and to enable it to give to each comer the information about himself which is priceless if scientifically accurate. These are: chemical laboratory, bacteriological laboratory, and urinary, blood, metabolism, fecal, x-ray, and anthropometric examinations. It believes that the old Greek adage, "know thyself," applies to the body as an adjunct ever to knowledge of the soul.

In the opinion of some, Battle Creek overemphasizes the supreme importance of low proteid diet. A backslider who resorted to importing a cold boiled chicken into his room there, felt hurt to hear it announced in the evening that during the day a guest had been found guilty of eating a dead hen. It is a fixed conviction on the part of those who have had personal practice at Battle Creek that a vegetarian diet is the only sure way to avoid the cultivation in the alimentary tract of those hostile bacteria which form poisons to our downfall. Their opinions have only been strengthened by personal experience in the laboratory of the world.

A most exhaustive treatise on the occurrence of appendicitis, written by R. W. Murray, of England, certainly points to vegetarianism as the natural precaution for "safety first" of that troublesome organ. It clearly shows that the disease is one of civilized diet. That men eat too much meat, and everything else as well, is becoming general knowledge. Fat men do not live long, and in nine cases out of ten the "running to fat" is but a proof of sheer self-indulgence, or ignorance of its dangers, and the price we have to pay for it. The average man, however, found it still almost impossible even in his own home to find palatable substitutes at his grocer's wherewith to satisfy his normal appetite. Battle Creek added to its task the endeavor to produce and popularize such. It is worth a visit to Battle Creek only to examine the ingenious substitutes for every kind of food with which the ordinary world is familiar. (The physical tests carefully carried out by Dr. Fisher, of Yale University, showed that the sanitarium staff of vegetarians, compared with athletes from Yale fed on meat, were just nine times as physically capable on an average in feats of endurance). But as Mahomet could not come to the mountain for any such purpose, health missionaries have been philanthropically dispersed to spread far and wide the new gospel for a new age. It is, however, still impossible to obtain a vegetarian meal in a Pullman car. It takes a hero to face the apparent discourtesy of being a vegetarian at a Thanksgiving dinner, or the scorn of a hotel waiter at an order confined to mush and pumpkin. Alas, also, those who as a rule stand most in need of an immediate change of intestinal flora realize that they are no longer in the hero class.

Among the innumerable charities started from this house of philanthropy, I shall refer only to the last and most unique—the Race Betterment Congress, which it organized and entertained, followed by its admirable exhibit for the same purpose at the Panama exhibition. Famous experts, present at that first congress of its kind, made its published records valuable and fascinating. Their attendance was made possible by their general recognition of the rapid increase of race degeneration, shown by the United States census bureau and records of the great life insurance companies. One result has already been the organization of the Life Extension Institute, offering its services to all insurance companies as well as to the general public, and the race betterment foundation with a prospective endowment of $1,000,000. Its object is not so much to discover new methods as to teach old ones so graphically as to make progressive measures acceptable to and indorsable among the great masses of the people.

Finally, this article is not to exalt Battle Creek or any one institution, or to attempt to give instruction in its various methods. It has no secrets, no patents, and no panaceas. It is written as a recognition of the indomitable pluck, the extraordinary genius, and the bona-fide motives of those who are so earnestly working and so largely succeeding in introducing methods for health and happiness which are within the reach of everyone, and which have already blessed so many thousands.

No one has a proprietary right to open-air sleeping, keeping in the sunshine, correct posture, massage of the body, sensible exercise, simple electrical treatment, scientific cooking, rational eating, water or other baths, and the thousand and one aids to nature which, though they cannot insure immortality to the finite, can, if rightly understood and handled, do more for righteousness, joy, and peace—that is, the kingdom of heaven on earth—than all the drugs ever invented or all the maxims of philosophies and preachers ever proclaimed.

In the struggle for existence, distrust of the motives of others was originally almost essential for self-preservation. Alas, there are still those who still wonder "what the good Samaritan got out of his job." A long experience of Battle Creek has forced me to class it as one of the vital forces now working for righteousness in the world.

It must not be supposed from what I have written that I am myself a confirmed vegetarian. I never used alcohol, and I have eschewed tobacco and hot condiments, and meat to as large an extent as possible. But, living in Labrador, I am still forced to bow in the house of Rimmon. In that environment vegetarianism would spell starvation. How-

ever, therefore, as much as I might agree in the theory with the gentleman who went to the Adirondacks to live on nuts, we were not able to keep it going long owing to the trifling supply of that commodity which he sent us. Moreover, I should feel a traitor to our people if I acknowledged that I had relegated fish food to my list of poisons. An absolute believer in the need for the strongest possible protest against luxury and overindulgence in foodstuffs, an ardent admirer of Dr. Kellogg and his system and sanitarium, I shall myself, I fear, have to forego any years which a diet absolutely void of offense might offer me, but, because I realize the immense debt I am already under to Dr. Kellogg and his teachings, I have tried to write this explanatory article. WILFRED GRENFELL, M. D.

## HOSPITAL FEES FOR INDUSTRIAL CASES

### Philadelphia Hospital Association Fixes Schedule of Charges Under State Compensation Law—A Most Important Move

The following correspondence, sent out by the secretary of the Association of Hospital Superintendents of Philadelphia, is self-explanatory, but a word might elucidate the matter somewhat:

Most of the states are passing compensation and sick insurance laws, and are generally covering the problem of insurance of one form or another for industrial employees. The hospitals of Massachusetts have only recently had up the problem of charges for these industrial cases, and the matter is not settled in that state; nor is it settled in any of the states. Pennsylvania is peculiarly situated in regard to its hospitals. Most of these institutions are subsidized in one form or another by the state, and an attempt is being made very seriously just now to reduce the hospital subsidies to fair working conditions—namely, that each hospital shall receive an amount of money anually from the state proportionate to the amount of actual charity work which it performs, and Pennsylvania, through its board of medical licensure, with Dr. J. M. Baldy at the head, is trying seriously to improve hospital conditions and to raise the standards of the institutions in that state. With a knowledge of these details, the attempt of the Philadelphia hospitals to fix charges and the conditions under which industrial cases shall be received in the hospitals will be noted as a most important action.

The following letter was sent to all manufacturers in Philadelphia:

Dear Sir: The inclosed list represents a fee schedule adopted by the hospitals of Philadelphia for the board and care of industrial accident cases under the Pennsylvania state compensation law. The charge for board, treatment, and nursing of bed patients is below the cost of maintaining such patients in many of the hospitals of Philadelphia, and many of the fees in this schedule are lower than those charged in other cities. Some of the local hospitals have been treating industrial accidents as free cases, and where a charge has been made it has usually been much below cost of maintaining such patients.

The deficiency resulting from the above practice has been made up out of the income from endowment funds or voluntary contributions, which funds and contributions have been given for the purpose of maintaining *charity* patients.

The hospitals listed, which have adopted this schedule, are not conducted for profit, and the schedule of fees has been arranged with a view of covering only cost of such patients.

Very truly yours,

W. W. WALSH, M. D., Secretary.

This letter was accompanied by the following explanatory sheet:

IN RE HOSPITAL CHARGES

PHILADELPHIA, PA., March 13, 1916.

Employers of labor may at first feel that a charge of $2 a day for the board and treatment of ward cases is excessive, but when the situation is understood it is believed they will realize that the action the hospitals have now taken is the only proper one, and that this action has been long delayed.

It has been suggested that it is unfair to charge $2 a day for industrial cases when some other cases are treated for $1 a day. If this argument were followed to its logical conclusion, it would be equally unfair to charge $1 a day for one case and to make no charge for another case in the same ward, which has been the recognized practice of hospitals in Pennsylvania since their foundation.

The charge of $1 a day was instituted more than a century ago, when the cost of maintaining a patient was below that figure. Today there are very few hospitals whose actual per capita per diem cost is below $2, and many are much above this amount. It is, therefore, manifest that a great deal of charity is being given to many patients who believe they are really pay cases.

A lower rate than $2 a day would mean that the deficiency in the future, as in the past, would have to be made up out of income from endowments or contributions which have been made for the treatment of indigent patients. In the past many hospitals of Philadelphia have been treating the injured employees of prosperous industrial concerns as charity patients, and in doing this have deflected funds from the purpose for which they were given—the care of persons needing charity. The hospitals feel that it is not right to continue this practice, and believe employers of labor will not want it continued when the conditions are understood.

The rate of a pay patient in a ward should be the per capita per diem cost. Patients who are admitted below this amount should understand they are receiving part charity.

The schedule of fees adopted in Pennsylvania is lower than that charged in most other states, where the weekly charge for industrial cases is $15 instead of $14, as in Pennsylvania. The schedule of charges for receiving ward and dispensary cases in Pennsylvania is below the rates charged in many other states, and, as a large majority of the cases are minor injuries, the employers will soon recognize the liberal attitude the hospitals of Pennsylvania have taken in these cases. The maximum charge of $25, excepting where a major operation is performed, is much below the maximum in some other states. Many of the accidents which receive ward treatment remain in the hospital for several weeks, costing the hospital several times the amount of the maximum compensation allowed.

It seems a well-established fact that insurance rates have been based on the expectation of a higher schedule than the one in force in Pennsylvania, and some of the insurance companies who are doing business in other states have expressed their appreciation of the liberal attitude the hospitals in Pennsylvania have taken.

Before the hospital schedule was adopted, one insurance company circulated a higher schedule, and asked physicians and hospitals to agree to treat their cases under said schedule. This same company has since issued a lower schedule to conform with that suggested by the hospitals.

The hospitals are very desirous that the cordial relations which have existed between them and the industrial concerns of the community in the past will continue in the future, and believe that in the final analysis the position the hospitals have taken will be commended and not criticised.

The schedule and list of Philadelphia hospitals signing to meet the schedule are as follows:

FEE SCHEDULE FOR THE TREATMENT AND CARE OF INDUSTRIAL ACCIDENT CASES UNDER THE STATE COMPENSATION ACT

| | |
|---|---|
| *House Cases—* | |
| Bed, board, and general nursing (minimum charge, $5.00) per day | $2.00 |
| Operating room fee | 5.00 |
| Ambulance service | no charge |
| Laboratory examinations (not often needed) | $2.00 to 5.00 |
| Special drugs, serums, vaccines | at cost |
| *Receiving Ward and Dispensary Cases—* | |
| First dressing | $1.00 |
| Subsequent dressings | 1.00 |
| Anesthetics | 3.00 |
| *Other Fees—* | |
| Minor operations | $ 2.00 to 5.00 |
| Major operations | 25.00 to 50.00 |
| X-ray examinations | 3.00 to 10.00 |
| Reducings and dressings—fractures | 5.00 to 15.00 |
| Reducings and dressings—dislocations | 3.00 to 10.00 |
| Written report at any time as to condition of patient | no charge |
| Special examination and full report | 3.00 to 5.00 |

HOSPITALS THAT HAVE ALREADY ADOPTED THE ABOVE SCHEDULE

| | | |
|---|---|---|
| Howard. | Germantown. | Pennsylvania. |
| Woman's Medical College. | Jewish. | Women's Homeopathic. |
| Children's Homeopathic. | Mt. Sinai. | W. Philadelphia Hospital for Women. |
| Garretson. | University of Pennsylvania. | Roosevelt. |
| Women's. | Jefferson. | Frankford. |
| N. E. Dispensary. | Philadelphia General. | Children's Hospital. |
| Fred Douglass Memorial. | Presbyterian. | Medico-Chirurgical. |
| Samaritan. | German. | Episcopal. |
| | Hahnemann. | Stetson. |
| | St. Luke's. | |

# CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
*Army Medical Museum and Library, Office of the Surgeon-General, United States Army.*

**Largest Hospital (The) in Vienna** (Das grösste Spital in Wien). New York Staats-Zeitung, 1916, February 17.

A new military hospital has been erected in Simmering, near Vienna. It consists of fifty-six barracks and contains 4,500 beds. A number of reserve hospitals established in school buildings, military barracks, etc., are now transferred to this hospital. Dr. A. Herzfeld will be the director of this great establishment.

**The Need for More Insane Hospitals in New York City.** Ed. Med. Record, 1916, LXXXIX, No. 8.

The New York State Hospital Commission is urging that the proceeds of the suggested sale of the Mohansic State Hospital site be used for the purchase of another site and the erection of a hospital near New York city. The commission believes that this action is imperative because of the overcrowded condition of the state hospitals for the insane, particularly those near the city. The capacity of all the fourteen state hospitals is 27,840 patients, but at the present time they are housing 6,484 patients over the number of those who can be properly accommodated, and each year the overcrowding becomes worse.

**Construction of a Barrack School Building for Children Infected with Ringworm** (Costruzione di una scuola-baracca per tignosi a Milano). Ospedale Maggiore, Milano, 1915, III, No. 11.

To prevent the spread of ringworm infection, the city of Milan has erected a temporary school building for children affected with ringworm on grounds belonging to the Ospedale Maggiore. The building contains three school rooms, a dining hall, a room for the teachers, and several auxiliary structures.

**The Standardized Hospital and Its Obligations.** Gordon K. Dickinson. Jour. New Jersey Med. Assn., 1916, XIII, No. 2.

The standardized hospital will be one that will comply with the laws of the state and accede to the demands of the colleges. It will consider the interests of the patient as paramount, giving to him the best methods of treatment. The attending staff shall have every facility for diagnosis and the proper care of the patients, and not be hampered by economics. The education of the intern shall be entered into by every member of the attending staff, and every facility given him to obtain a practical knowledge of symptoms, diagnosis, treatment, and end result. He shall receive an honorarium. In return for the salary and for the training obtained, which is under the guidance of the college from which he comes, the intern shall be expected and compelled to live up to rules and regulations of the institution that are in accord with the law and college demands—for instance, prompt attendance on the ward, care, supervision of hospital work, keeping of a complete history of each case, and finishing his work before he takes an afternoon off. The nurse shall be completely educated by lectures, book study, and practical methods.

**Hospitalization of Sick Prisoners of War** (Hospitalisierung kurbedürftiger Kriegsgefangener). Der Bund, Berne, 1916, January 22.

Through the humane efforts of the Swiss government an arrangement has been brought about between the governments of France and Germany by which sick prisoners of war who are detained in these two countries are sent to Switzerland for treatment. At first the tuberculous soldiers kept as prisoners in the two countries will be released and sent to the well-known health resorts of Switzerland. The German soldiers will be treated at Davos, the French at Leysin and Montana. Later on prisoners of war with other serious diseases will also be sent from both countries to Switzerland for treatment. To take care of so many patients, it is planned to convert some of the numerous Alpine hotels, most of which are now closed on account of the war, into sanitariums. Surgeons of the Swiss army will visit the prison camps in France and Germany, and select the patients which are to be transferred to the Swiss health resorts.

**Reported Dangers from Enamel Ware.** Ed. The Jour. A. M. A., 1916, LXVI, No. 8.

The use of enamel ware meat choppers has been forbidden by the French Superior Council of Hygiene because of the danger of small fragments becoming mixed with the meat. Longworthy and Long, of the Office of Home Economics in the Department of Agriculture, assert there is not a known case on record where serious injury has been done the intestinal wall by enamel fragments, but call attention to the liability of danger in the coloring pigments used in enamel ware; that enamels containing lead oxid are dangerous, due to poor resistance to various chemicals, but that this ingredient is rapidly coming into disuse. Experimental work on the antimony enamels tends to prove that little of the antimony compounds are extracted when boiled in weak organic acids. It is, however, now possible to purchase enamel ware labeled, "free from antimony."

**Hospital Conditions Illustrated by the Institutions of Three Great European Cities** (Het ziekenhuiswezen met voorbeelden ontleend aan drie groote steden in Europa). By Dr. J. L. Wortman. Ziekenhuis, Amsterdam, 1915, VI, No. 12.

The author visited a great number of hospitals in Germany, Denmark, and France, and comes to the following conclusions:

Hospitals have reached their highest development in Germany, "the cradle of all social medicine," but Denmark, especially as regards the hospitals of Copenhagen, is a close second. France has lagged behind in hospital science, though of late years she has also made great progress. It is certain that after the war hospital development will make great strides in the belligerent countries. Never before have so many millions of people learned to know the great value of medical science. Closer than ever before will national ties bring the various classes of the people together, and the public spirit will be raised to such an extent that public hospitals cannot fail to greatly profit by it.

The Hamburg hospitals are representative in hospital construction in Germany. The Hamburg-Eppendorf Hos-

pital is the counterpart of the old corridor structure. Its beginnings date back to the seventies of the last century. A great number of large pavilions have gradually been added, so that there is now room for 2,000 patients. Of a still older date is St. George's Hospital, but it has recently been entirely modernized and a number of pavilions have been added. It contains now about 1,600 beds. During the last few years the city has built, at a great expense, a new hospital at Barmbeck. On grounds comprising twenty-one hectors thirty-three large pavilions have been erected capable of housing 1,750 patients. The basic idea of this hospital was to separate the various diseases. There are pavilions for angina and influenza, surgical tuberculosis, skin and sexual diseases, etc. The Barmbeck institution is the type of the modern German hospital—large pavilions on extensive grounds, and provided with all the improvements of modern science. These hospitals are centers of science, and do more scientific medical work than many university hospitals.

Copenhagen has recently erected a new hospital two kilometers from the city. Bisbebjerg Hospital is one of the most modern institutions of its kind, and to see it is alone worth a trip to Copenhagen. It stands on a beautiful plateau, with a magnificent view of the surrounding country. The University Hospital, completed in 1911, is a monument to the enterprising spirit of the Danish people. In the center of the grounds are the pavilions for internal and surgical diseases, separated from the stir of the student clinics. The large sick wards in the pavilions, though containing 28 beds each, make an extremely pleasant and homelike impression. The large Municipal Hospital, in the center of the city, on one of the great thoroughfares, is a model of a great corridor structure. The large tuberculosis hospital at Oresund, with its pretty pavilions and beautiful park, looks like a handsome village. It has room for 500 patients.

The city of Paris has during the last few years appropriated 45,000,000 francs for improvements in its hospitals. In 1914 40,000,000 of this sum had already been spent on a great number of new buildings for the various hospitals and hospices. The so-called hospices are institutions receiving foundlings, orphans, old people, incurables, insane, epileptics, etc. These hospices thus serve chiefly as establishments where all permanently mentally, bodily, and socially abnormal individuals are cared for. The Hospice de Bicêtre contains a medley of all kinds of patients, among them being 1,208 insane persons and 1,172 old people. Among the latter class are many epileptics and tabetics, and patients suffering with incurable cancer. A similar medley of patients is found in the well-known Salpêtrière Hospital, which, with its 4,000 inmates, is the largest nosocomium in the world. Most of the Paris hospitals are old structures, which fact explains the large sums spent for modernizing them. The oldest is the Hôtel-Dieu, whose history runs back to the eighth century. Of historical interest is also the Hôpital Lariboisière, with its extensive grounds, as it was the first great pavilion hospital ever constructed. The Paris hospitals form two large groups—general and special hospitals. The latter are again divided into hospitals for adults and children. The general hospitals are scattered all over the city, each receiving the patients of a certain quarter of the great metropolis.

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**Effect of Foods on Aluminum Cooking Vessels.** Professor John Glaister. The Jour. of Home Economics, 1916, VII, No. 6.

Professor Glaister, of the University of Glasgow, has recently made public the reports of his experiments on aluminum cooking utensils. Various foods, such as bacon, milk, oranges and lemons to form marmalade, brussels sprouts, and tomatoes, were cooked in aluminum containers under kitchen conditions. The foods were then analyzed by standard methods for aluminum in its various chemical compounds. The greatest amount of the metal extracted was in the form of aluminum hydroxid, an equivalent of 1.018 grains to two pounds of orange and lemon marmalade. This quantity would be perfectly harmless even if the entire amount of preserves be eaten at one time, which would be extremely improbable. No aluminum chlorid was found in any of the experiments, and the largest amount of hydroxid found would, if converted into chlorid in the stomach, still fall far short of the medical dose of aluminum chlorid.

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**Impressions of the Care of Wounded and Sick Soldiers in Austria** (Indrukken over de verpleging der gewonde en zieke militairen in Costenrijk). Dr. Z. Quack. Ziekenhuis, Amsterdam, 1915, VI, No. 8.

The Austrian military hospitals in Bohemia, Silesia, and Moravia contain about 100,000 beds in all. The author is most favorably impressed with the excellent management of these hospitals. Chrudim, where the author worked for three months, is a small town about fifty miles from Prague. It is an educational center. Ten of the largest school buildings were converted into hospitals. Each hospital receives a special class of cases. Three hospitals are devoted to surgical cases, three to internal diseases, one to infectious diseases, one to venereal diseases, and one to patients suspected of having a contagious disease. The author acted as a surgeon in a large, handsome college building, which had, with great skill, been converted into a hospital. On the first floor were the rooms for the physicians and the Swiss and Dutch Red Cross nurses, a room for the disinfection of the uniforms of the soldiers, bath rooms, etc. On the second floor were the large electrically lighted sick wards. One wing, containing the typhus and dysentery patients, was completely isolated from the other parts of the building.

Merely to see the arrival of a hospital train and the disposition of the wounded, the author says, is worth a trip to such a hospital. The train stops in front of a long wooden station building. The platform between the building and the train is covered by a shed and divided into ten compartments, according to the nature of the cases. Nobody is allowed to leave the train. First the seriously wounded are unloaded and carried on stretchers to their respective compartments. Doctors go around and attach to each patient the number of the hospital and the number of the ward where he is to be carried. Then the Red Cross ambulances, each holding four stretchers and large transportation vans, each capable of carrying twenty-two stretchers, carry the patients to their respective hospitals.

The author also visited the barrack hospital at Pardobitz, and was impressed with its large size. It consists of rows after rows of long one-story barracks, and has room for no less than 15,000 patients with infectious diseases. The erection of this hospital alone cost 18,000,000 crowns (about $3,500,000).

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Through Judge D. C. Webb, of the juvenile court, the city of Knoxville, Tenn., has been offered a private donation of $10,000 for the erection of a detention home on the condition that the city will maintain the institution.

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Miss Marguerite Burgoyne has recently received the appointment of occupation manager at the Burke Foundation for Convalescents at White Plains, N. Y., and considerable extensions in this field are planned by the foundation.

# INDEX OF HOSPITAL AND SANATORIUM LITERATURE

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The recent financial campaign for the benefit of the Youngstown Hospital, Youngstown, Ohio, brought subscriptions amounting to $236,000.

# DEPARTMENT OF NURSING

Conducted by MISS ANNIE W. GOODRICH.
*Teachers' College, Columbia University. New York City.*

Please address items of news and inquiries regarding Department of Nursing to the editor of this department, Teachers' College, Columbia University, New York City.

## Nursing Care of the Insane

On February 14 last the queen unveiled a memorial of Florence Nightingale, placed, reports the London *Times*, "in the crypt of St. Paul's Cathedral on the wall of the great archway that leads from Nelson's tomb to Wellington's, not far from the graves of Wolseley and of Roberts." At this ceremony the archbishop of Canterbury said, in part, as follows:

"For half a century we have thanked god for what Florence Nightingale has wrought and taught, but we did not know its range or its greatness until now. So it is fitting that your majesty, on behalf of English womanhood, should unveil this monument in a year when, in the nation's need, tens of thousands of women are, with persistency of quiet devotion and a ministry of steadily increasing skill, following the path wherein 'the lady with the lamp' was pioneer.

"It is easy, or, rather, it is not easy, to measure what the difference might have been had that pioneer been a woman of unbalanced enthusiasm, however eager, or of mere plodding devotion, however praiseworthy. The lead she gave might easily have been discredited and therefore fruitless of result. But when to a buoyant faith, a courageous hope, and a large love were superadded the gifts of penetrating judgment, of potent personal influence, and of almost unrivaled administrative skill, the fruitfulness of the leadership was immediately secure. England and, through England, the whole world know now, to a degree they never knew before, in camp and hospital, on land and sea, the priceless value of the gentle deftness and the tender skill of trained womanhood both in peace time and when the horrors of war are at their worst.

"We do well to set here in our Cathedral among our warriors' tombs the monument of one to whom we owe so much."

It is indeed not easy to measure what the difference might have been had this woman, so many years in advance of her time, preached less intelligently and convincingly preparation and prevention, nor is it easy to measure the results that might have followed had her scheme of nursing education been less in seeming and more in substance carried out.

Dramatic and tragic as is the nurse's field today in the countries at war, it is not perhaps so much more dramatic or tragic than the nurse's field—certainly the so-called public health field—today in this country at peace. For the needs of the former we are grateful that she is showing herself prepared. For the needs of the latter we are constantly told by those best fitted to pass judgment that she neither numerically nor educationally measures up. The leaders in the public health field are insistent that special courses be provided during the three years' training, elective or required, for those students who are likely to enter this field. They particularly urge practical and theoretical instruction in tuberculosis and other infectious and contagious diseases, and mental diseases; they lay much stress on very thorough courses in the care of the child, from the prenatal to the adolescent period, and they advise courses in social service and in industrial and visiting nursing. While we question if these last three courses should be included in the general scheme of nursing education, believing that they are part of the later and special preparation, we are not only heartily in sympathy with the other courses that they urge, but we deem it to be a heavy indictment of nursing education that today they should have to beg that graduates in nursing should come so prepared. The workers in the public health field are only voicing, however, what has been appreciated by nurse educators for a number of years, and that is that schools of nursing are preparing the nurse mainly on the basis of what the individual institution has to offer—not on the needs of the community. Not until the public health field was opened did the nurse's preparation, in relation to the needs of the community, come under close and qualified scrutiny.

It is sometimes said that the failure to provide experience in contagion and mental disease is due to the student's unwillingness to take these services. To give this as a reason is not to be conversant with the hospital situation. It is true that it is not possible for special hospitals to attract students in large numbers for limited and demanding fields, especially when the course offered covers a period nearly as long as the period required for preparation for the general field. But whenever a general hospital has a department of contagion, psychiatry, or tuberculosis, and it is expedient that the nursing shall be done by the student force, the student is found there, and without a protest on her part. The writer can speak concerning a tuberculosis service from an experience in two hospitals extending over five years. Only twice during this period did any student protest, although in one institution the badly ventilated and overcrowded wards, the long hours, and inadequate staff would have fully justified a protest on the part of the students. No, there are other reasons for the failure of schools of nursing to obtain and require these services for the student nurse when they cannot be provided through their own plan, and in some instances they are quite justified in not procuring affiliations. The demand, however, that nurses shall have these services is not only too insistent, but too reasonable not to command the sympathetic and effective interest of those who have assumed the responsibility of the nurses' training, if their consideration of the matter be but secured.

We hope that not only those who are concerned with the education of the nurse, but those interested in health problems, will carefully study the report on the nursing care of the insane in the United States that appears in this issue. This report was prepared for the American Nurses' Association by Miss Katherine Tucker, chairman of the Committee on the Care of the Insane. The members of Miss Tucker's committee were all nurses thoroughly conversant with the special problems of this field, while she herself has held the position of social service director of the Committee on Mental Hygiene of the New York State Charities Aid Association for a number of years. The report of this committee presents very clearly the difficulty of urging the affiliation of the general hospitals with mental hospitals at the present time. It is far more urgent that the general hospitals should send their students for a course in the mental hospitals than that they should open their doors to the students from these hospitals. We believe that we are expressing the opinion of a number of our most thoughtful and experienced nurses in this field when we say that the best result will be obtained in mental nursing when the experience in the general hospital comes first. The problems in mental training are infinitely more intricate and delicate than those met in

any other branch of nursing, not excepting the nursing of children, and require therefore the highest type of women with the most thorough and all-around preparation. Here, not less than in other fields, is the preventive work from the standpoint of the community the greatest need. To put the knowledge of mental diseases in the hands of the nurse, it matters not what her field is, is to strike at the root of one of the most serious and tragic problems that we have to face in the community today. We are convinced that some, at least, of the conditions that justify the general hospitals in refusing to consider an affiliation with mental hospitals are more a question of readjustment than of additional appropriations. The organization of the school, the scheme of education, the placing of nurses, attendants, and employees in one group or class, all might be changed if the need of such changes were appreciated.

It will be noted that the system of administration in these hospitals is quite the reverse of that outlined by Dr. Hurd in a recent editorial under the caption, "Who shall manage the training school for nurses?" Dr. Hurd outlines clearly the logical system of control, emphasizing that, while the appointments in the nursing department should be approved by the superintendent of the hospital and ratified by the board of trustees, the superintendent of nurses should have the selection and control of the nursing staff. "No person," he says, "has the right to ask any artisan to do a specified task and at the same time forbid him to select his own tools. This is equally true of one who is responsible for the education of nurses. All courses of study should be arranged by the superintendent of nurses after consultation with the superintendent of the hospital. All assignments of duty of nurses should be left to the same authority. It is impossible to give nurses a rounded and complete course of instruction and experience when they are assigned to duty according to the whims of physicians. It must not be forgotten that the object of the training school is not alone to secure nursing for the hospital; it is equally to give a proper education to the pupil nurse." Mental hospitals, and indeed all special hospitals, should be urged and aided to make the readjustment that will encourage the general hospital to affiliate with them; not less for the benefit of their own patients than for the benefit of the community at large. The question of organization is an especially important one in mental hospitals.

It must be admitted, however, that the rapid expansion of the nursing field, with the consequent increasing educational demand, is placing too heavy a burden on the hospitals. It is even now beyond the possibilities of any but the largest and most heavily endowed institutions to give the nurse the preparation that is generally considered to be essential. The logical outcome will be, and indeed already is in one or two instances, the establishment of the school of nursing under the university. Not only will all the resources then of the university be available for the school of nursing, providing the scientific foundation now generally accepted as desirable and making the establishment of graduate courses for the special fields easily possible, but the insight and experience of educators in other fields will be brought to bear on the problems in the field of nursing education.

"It must not be overlooked," says an educator, "that the similarities in all educational problems are greater than the differences." Says another authority, "Under modern social conditions a nation will . . . inevitably lack not only industrial power, but also social contentment and efficiency, if it fails to conceive its various educational difficulties as fundamental—a single problem to be worked out by institutions related in the most vital way to one another and representing together a national conception of progress and betterment."

The affiliation of schools of nursing with private, endowed universities will mean a special endowment; but it should not be less possible to obtain endowments for these schools than for others. Under a state university a special appropriation will probably be required. The schools so established will be no more than is any medical school an integral part of the hospital. One or more hospitals will serve as laboratories, and to their own great advantage, for these schools. This will result, probably, in fewer schools of nursing, possibly in fewer hospitals. It will not necessarily diminish the number of graduates in nursing or the number of hospital beds. It will provide a sounder body of education than can be hoped for with the widely varying courses in nursing that now obtain. It will insure to the state that is making increasingly large appropriations for this public servant a person competent to deal with health problems. It is not less important and just that the citizen also, who is paying for an expert, should be insured a competent nurse.

ANNIE W. GOODRICH.

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### The Annual Convention of the Three National Nursing Organizations

The annual convention of the three national nursing organizations—the American Nurses' Association, the National League of Nursing Education, and the National Organization of Public Health Nursing—will be held in New Orleans, La., from April 27 to May 3, inclusive. The headquarters of the organizations will be at the Hotel Grunewald, and all the meetings will be held there, except the mass meeting on Sunday afternoon, for which the Atheneum has been secured.

The midafternoon and evening sessions will be open, and will be attended by the three organizations. Sessions will be held by each organization every morning from 11 to 12:30; round tables from 9 to 10 and from 5:30 to 6:30 will also be held daily.

At the formal opening on Thursday evening the invocation will be made by Bishop Sesums, the address of welcome by Mayor Berham, and there will also be addresses by the Hon. Leon Locker and the presidents of the three organizations—Miss Noyes, of the National League of Nursing Education; Miss Gardner, of the National Organization of Public Health Nursing; Miss Goodrich, of the American Nurses' Association.

The evening session, under the auspices of the National League of Nursing Education, will be on "Problems of Nursing Education." A paper will be read by Miss Nutting on "The Ideal Training School with a Special Endowment." There will also be a paper on "The Present Status of Woman's Education."

The evening session, under the auspices of the National Organization of Public Health Nursing, will be presided over by Dr. Oscar Dowling, president of the Louisiana State Board of Health. The subject under discussion will be "Municipal Nursing," and it is expected that papers will be read by Dr. Patterson, of Ohio; Mrs. Margaret Sirch, of California; and Dr. Terry, of Florida.

The evening session, under the American Nurses' Association, will be devoted to the work of the Red Cross. Papers will be read on "The Red Cross Nurse in Time of Disaster," by Dr. Dowling; "Experiences of a Red Cross Nurse in Serbia," by Miss Gladwin, illustrated by slides; "How a South Carolina Community Provides for Sanitary Inspection," by S. M. Babb; and "Town and Country Nursing Service," by Miss Clement, with moving pictures show-

ing the activities of the nurse in the small community. Miss Delano will give a brief review of the Red Cross activities during the year.

One afternoon session will be devoted to mental hygiene, another to legislation governing the practice of nursing, and a third to the dietary department in a hospital.

At the morning sessions and at the round tables the following subjects will be taken up: Records and Statistics, Medical Social Service, Mental Nursing, Industrial Nursing, Tuberculosis Nursing, Rural Nursing, Private Duty Nursing, Hourly Nursing, Directories, Problems in Hospital Administration, Problems in Training School Administration.

In the March issue of the *American Journal of Nursing* will be found the report of the transportation committee, which gives in detail the special sight-seeing tour arranged by the Frank Tourist Company. Mrs. C. V. Twiss, chairman of the committee, 419 West One Hundred and Forty-fourth street, New York city, will be glad to give any further information that may be desired.

## The State Board of Health and Ohio's Public Health Nursing Service[1]

BY HELENA R. STEWART,
Brown University, New York Hospital, State Supervising Nurse of Ohio.

The problem which confronts the Ohio State Board of Health is the elimination of preventable diseases and the improvement of health conditions in the state. Through the "Division of Public Health Education and Tuberculosis" the work of propaganda is carried on by lectures, literature, exhibits, and newspapers; yet, in our opinion, the best kind of education comes in the homes of the people at the time when sickness makes its appearance. At such times the nurse with a social vision can inculcate the principles of hygiene and sanitation in a manner and with a lasting effect that cannot be equaled by any other agency. Our ambition is to provide a public health nursing service that will cover every square foot of territory in Ohio, and, when this has been accomplished, we can attack the problems of tuberculosis, infant mortality, and hygiene of school children on a systematic basis.

The growth of the nursing service in Ohio indicates clearly that there is a latent desire for such work on the part of every community in the state, and it needs but to be crystallized in order to find expression. When this work was begun in 1911, there were twenty-three organizations in cities of 69,067 to 560,000 population, employing 126 nurses. On September 1, 1915, there were sixty organizations in cities of 4,000 to 560,000 population, employing over 400 nurses. There are still large sections of the state without the services of a nurse, and it is estimated that it will take at least five years more to close up the gaps in our organizations.

Dr. Lee Frankel, of the Metropolitan Life Insurance Company, said last summer in San Francisco: "The day has gone by when it is necessary to offer apologies for visiting nurses. This form of activity is today well recognized as an important factor in the improvement of health conditions. Beginning as a philanthropy primarily for bringing medical services into the homes of the poor, visiting nursing has evolved by leaps and bounds. Today the visiting nurse is used not only as a philanthropic measure, but by health officers in the health work of their respective communities, by private organizations engaged in the prevention of disease, by industrial establishments to enable them to care properly for their employees, and by insurance companies to promote the physical welfare of their policy holders. With the development of visiting nurse work, there have come certain responsibilities. Not the least of these is the necessity for a careful accounting of the work done."

The results obtained through the service of the visiting nurse should be known to the health officer, the private organizations, the board of education, or the industrial company employing the service. There is probably no nurse here who does not believe in and keep records for her own particular community, but these are not necessarily expressive of conditions existing in the population generally. We have been criticised because at present there are no reliable data for nurses' work available, and there are many figures which it would be possible to gather and which would be of value not only to the National Organization for Public Health Nursing, but to all students of sickness and its social consequences.

Ohio is the only state which has the equipment to furnish these records and statistics, for it is the only state in the Union to recognize the value of a public health nursing service to the extent of appropriating money for its extension and standardization. Much credit should be given the nursing organizations in the large cities for the respect which the legislators must have had for their work in order to wish to provide the smaller cities and towns with a similar service.

This appropriation was given to the State Board of Health for its Division of Public Health Education and Tuberculosis, and a nurse was employed whose office it was to extend and standardize public health nursing. She was to be paid by the state, she could have access to state reports, and her interests were to cover the state, yet the Division of Public Health Education and Tuberculosis has always been, and is still, absolutely dependent on the goodwill, interest, and cooperation of all the public health nurses for the collecting of any data for their work. As the state is made up of cities and counties and townships, its records of nursing, as well as its records of any other of its activities, are incomplete without the records and statistics of all its constituents. The State Board of Health is the natural, logical center for the collection, classification, and study of these reports, for it is not a local organization; its limits are the boundaries of Ohio, and, while its offices are in Columbus, its interest is no more centered in Columbus than in Dayton or Cleveland or Monroeville.

The request for your support and cooperation is not in any sense intended to be an interference with your organization or plan of work, but merely your contribution to the total figures. If these statistics can be collected, the Division of Public Health Education and Tuberculosis will not claim any ownership, for we shall consider that they belong to every city, village, and county in Ohio, and not to Ohio alone, but all the other states which are looking to us for results.

The Metropolitan Life Insurance Company is asking what we are accomplishing in Ohio. Different departments of nursing and health in various universities, the National Organization for Public Health Nursing, and the National Organization for the Prevention of Blindness are looking to Ohio for records and statistics because our equipment and some of our laws in regard to prevention of disease are more advanced than those of other states. Ohio's new law in regard to the prevention of blindness from inflammation of the eyes of the new-born is the most advanced of any in the United States, and is

[1]Read before the Ohio State Association of Graduate Nurses, October, 1915.

regarded as a model for other states. According to this act, every case of inflammation of the eyes of the newborn must be reported immediately to the local health officer. If the case comes under the observation of a nurse, she is responsible by law for the reporting of the case. If the afflicted baby is in a family where a private nurse cannot be employed, the health officer or physician is instructed to call on the public health nurse for help in the treatment of the baby's eyes. If the little patient is in a locality where there is no nursing service, by telephoning or telegraphing to the State Board of Health a nurse can be obtained, who will treat the eyes of the baby and teach the family the danger of the disease.

It is estimated that 50 percent of all blindness is preventable, and that more than one-quarter of the pupils in the schools for the blind are sightless because their eyes were not properly treated during the first days of life. Surely it is our responsibility to spread the knowledge that much blindness is needless and to teach the various causes of blindness and prevention, and to share the reports of our work with others laboring for the same cause.

There is a great advantage in having all tuberculosis work centered in one office. The notification and registration of all cases of tuberculosis is now compulsory, and this fact is recognized as one of the first and most important measures to be adopted and insisted on, and such a regulation can come only through and be enforced by health departments. The State Board of Health furnishes uniform blanks to all the health officers in Ohio, so that all reports can be submitted in compliance with the statutes and the rules and regulations of the board.

As provided in the general code (section 3147), the State Board of Health has been given supervision of all state, county, and district hospitals for tuberculosis, and authority to prescribe and enforce such rules and regulations for their government as it deems necessary. With this authority, provision has been made for a bureau of admissions and discharges in the Division of Public Health Education and Tuberculosis. This work is in charge of a public health nurse. The State Board of Health shall be notified within twenty-four hours of every application for admission of a patient received by the medical superintendent or other responsible officer of each county or district tuberculosis hospital, and of every death or discharge of a patient, and, if possible, of every contemplated discharge. When the Bureau of Admissions and Discharges is notified of the admission of a patient to a tuberculosis hospital or sanatorium, it in turn notifies the public health nurse or the superintendent of nurses in the municipality or county from which that patient comes, sending to the nurse such information as the hospital superintendent has given our bureau of admissions and discharges, and will request from her a return report concerning conditions found in the patient's home and place of occupation. During the patient's residence in the sanatorium the nurse may thus keep in touch with the patient's family and associates.

When the nurse in charge of hospital admissions and discharges receives from the hospital superintendent the report of a patient's dismissal, for any cause, she will again notify the local public health nurse and send to her the hospital's report on the patient's condition on discharge. A report on home and family conditions will again be requested, as these will, no doubt, frequently change during the patient's absence. We are trying to keep in touch with the physical condition of patients from year to year. The importance of having accurate records on the outcome of sanatorium treatment, from which conclusions and deductions can be made and the coordination of this data gathered by numerous institutions, from a statistical standpoint cannot be overestimated. It is apparent that the incipient case—the favorable case—is the neglected case, and it is deplorable that the histories of the Ohio state sanatorium patients show delayed diagnoses averaging nine to ten months from the onset of the first symptoms before a diagnosis is made.

With the earnest cooperation of all tuberculosis workers, this system would give Ohio a better opportunity of controlling the tuberculosis situation than the state has ever had before, for a knowledge of the foci of infection is the first step in the discovery of incipient cases. We want to cover the state with lines of a public health nursing service like a cobweb on the grass, so that we may receive the messages of interest from even the most distant nurse, and so that she can get word to us if she needs help or advice. We want to be able to reach her when, through our system of reports, we hear of urgent cases in her district, and we want to know and record the work which she is doing.

The ultimate purpose of the whole division is the education of the people in the way of health, so that they may safeguard themselves from preventable diseases, and we believe that one of the most important factors in the accomplishment of this end is the public health nurse who goes as a friend and with a friend's welcome into the schools and homes of the people, telling them scientific facts in simple terms which they can understand, a service so great that its extent is difficult to imagine.

## NEW QUARANTINE RULE IN NEW YORK

### Greater Precaution to Be Used in Clearing Diphtheria Patients Who May Redevelop Bacilli

It may be of considerable interest to contagious hospitals to know of recent changes in the New York diphtheria quarantine regulations. It has been proven in many instances that, after the release of convalescent diphtheria patients, a third or fourth culture would show the presence of diphtheria bacilli in the throat or nose. In order to decrease the number of diphtheria carriers, a more definite period of quarantine has been established as follows:

"On and after February 28 no later culture will be examined for release from quarantine which is made earlier than twelve days from the date of report of the disease. Two consecutive negative cultures, made twenty-four hours apart, preferably from both nose and throat, will be required, as at present."

### Anthrax in Shaving Brushes

Recently in London some cases of anthrax were traced to infection through shaving brushes. Inquiry disclosed that another lot of these brushes had been consigned to Glasgow. By order of Dr. A. K. Chalmers, health officer of Glasgow, all the brushes were isolated, withdrawn from sale, and were examined. The bacillus of anthrax was isolated from hair taken from ten brushes, and was found to possess a degree of virulence quite equal to the organisms usually taken from cases of anthrax.

The New York city health department has sent out a warning about this source of anthrax infection, but also assures the people of that city that the prevailing methods of manufacture of shaving brushes in this country would preclude the likelihood of an infection of the kind. The department suggests that the point is well worth watching.

# DEPARTMENT OF DIETETICS

Conducted by MISS LULU GRAVES.
*Dietitian of Lakeside Hospital, Cleveland, Ohio.*

Please address items of news and inquiries regarding Department of Dietetics to the editor of this department, Lakeside Hospital, Cleveland, Ohio.

## The Status of Hospital Dietetics

The following bit of news was printed in many newspapers of the country one morning recently:

"Prominent women representing all parts of the country have been appointed members of a special committee to organize a campaign undertaken by the National Housewives League to build up the health of the nation by proper feeding as its contribution to the preparedness movement. Every woman's organization in the country will be urged to take up the propaganda."

"If we are ever to have war, we cannot fight with anemics and dyspeptics," says a statement issued by the league.

The importance of feeding people intelligently is gaining more recognition all the time. Women's clubs and numerous other organizations working for civic betterment have for some time been studying the composition, digestibility, and cooking of foods, and also related subjects.

What if these women should become so well informed that some of the members of the medical profession would have to arouse themselves from their lethargy and do a little studying in order to keep pace with the laity! Many medical men do realize the value of dietetics in their practice, and are giving it such prominence as to furnish another incentive to the less wide-awake man.

In our hospitals the scope of the work in dietetics is represented by the attitude toward the dietitian. In the February number of THE MODERN HOSPITAL Dr. Joslin has an article in which he expresses the situation very well when he says that in many of our hospitals the dietitian plays an unimportant role, but that it is very noticeable that the more modern the hospital, and the more up-to-date its management, the greater the power of the dietitian.

In the past the status of the dietitian has not been high for two reasons:

1. The hospitals have offered no inducement to the woman who is well trained or has valuable experience. In the majority of cases she has been expected to work in kitchens which were inadequately or poorly equipped, and often with not nearly enough help to do, as it should be done, the vast amount of work necessary to feed a large number of people. She has been expected to take orders blindly from physicians, nurses in charge of wards, nurses on special duty, or anyone else in the house who had need of extra food, and to fill these orders without question regardless of her resources or facilities for doing so, and quite regardless of any training she may have had. This has occurred in hospitals where very rigid regulations are observed when it comes to ordering from any department in the house except the kitchen. While her province covers more territory and includes more different kinds of work than any other one department, she has been offered less salary, and furnished fewer comforts or conveniences, than are offered the heads of other departments. Frequently she has not even been shown the same consideration and respect that the nurses in charge of a single ward are shown. Naturally, women of ability do not care to spend years in training for this kind of job—it cannot be dignified by the title of position.

2. Because of the conditions that have existed, the schools where domestic science is taught have not encouraged their best pupils to go into institution work. Even yet many of our instructors in domestic science are telling their students that they do not need such scientific knowledge nor so thorough training for hospital work as they do for teaching.

As a result, those who have gone into hospital work have been very often the young, inexperienced girls, or those who could afford to take only a short training. Thus, unprepared, they have not been able to work intelligently with the physicians; they lacked executive ability; the hospital life, with its multitude of requirements and regulations, has discouraged them, and they have had no desire to go on. The people with whom they should work have lost confidence in them, and from both points of view the work has been unsatisfactory.

Our most modern and best managed hospitals are overcoming the difficulties in this way: the dietetic department is being put on the same plane with other scientific departments of the hospital, the dietitian is given the same rights and authority that is given to heads of other departments, and is furnished with a few of the things necessary to put her department on a level with the others.

Perhaps the fact that this is being done may be made a little more real by telling a few personal experiences which have come to me in the past month—not necessarily that the past month has brought more of these experiences than any other month, but because they are fresher in my memory. The superintendent of a very large hospital came to me very much discouraged about the work of the dietary department. He said their doctors were wanting to do dietetic work in a scientific manner, but they realized their lack of knowledge of the subject, and felt they could not spare the time to go into it sufficiently to carry on the work. They wanted someone to take charge of their kitchen who could tell them what to order for certain conditions, and what chemical changes took place in the cooking of some of our food materials; in other words, who could work with them in treating diseases of metabolism. These people were offering a very good salary, would furnish a suite of rooms as the dietitian desired them to be furnished, were willing to get any necessary equipment for the kitchen, and were anxious to do everything possible to build up a dietary department which would be a part of the medical service.

Another man who is one of the members of the medical staff of a large hospital recently made this statement: "We do not want a dietitian such as is usually found in the hospital. We want a doctor of dietetics, and we are willing to pay for her."

It is plainly evident that progressive medical men are thoroughly alive to the fact that the feeding of their patients is just as important as any of the medical treatment, and must be done with the same care and intelligence.

Nurses have not been trained to this work, and herein lies another duty of the dietitian. It is a most common thing for one to hear a nurse or a physician say, "I did

not know that that food would be harmful for this patient," or, "I did not realize how many calories that would yield," etc. They should have someone to whom they can go for such information, and, on the other hand, they should be made to realize that this information is authentic.

Did one ever hear of a nurse asking a surgeon to change the nature of his operation because the patient preferred it otherwise, or request the medical man to give a different medicine because her patient did not like the one he prescribed? Yet, if her patient, who is being given a restricted diet for some specific disease, is served some food of which he is not particularly fond, she is far more apt to report to the kitchen that "my patient does not like this, and will not eat it," than she is to insist on the patient taking what is prescribed, as he does in the case of the other medical treatment.

Now, just what kind of a person shall we have in charge of our kitchen to do all of these things? In my opinion the dietitian should have jurisdiction over the entire commissary department. The work in the main kitchen and diet kitchen should fit together like dovetailing, and this cannot be done economically nor harmoniously unless there is someone who knows the work of both and has the viewpoint of both. If they do not work together, there will necessarily be useless repetition of work, duplicating of orders, need for extra supply cupboards, etc. If she has charge of the cooking and serving of all foods, she should also have authority over the buying of them. If she is responsible for the meals as served, she should certainly have control over all materials used and the people using them. Having this, she can immediately locate any defect in the system and remedy it. This, too, is an advantage to the administration, since only one person is responsible for the whole food problem, and, if anything needs readjusting, or if any information is needed to straighten out some difficulty, consultation with one person is sufficient.

So long as we have members of the human race who are being fed by someone else—whether it be nurses, doctors, or patients in a hospital, or girls in a boarding school, or any class of people in any walk of life whose meals are being prepared for them without any interest or effort at understanding on their part—just so long will we have people complaining of their food. Sometimes, when these complaints are made in a hospital, it is a great advantage to be able to take the matter up with one person and get at the source of trouble at once, thus deciding whether the complaint is a just one.

This would indicate that the person who is in charge of the commissary department must know foods—their commercial value as well as their nutritional value; she must know qualities, and it goes without saying that she must know quantities; she must know enough about cooking to know when foods are being properly prepared—i. e., that they are cooked so as to be most easily digested, that much of their nutritive value is not wasted in the cooking, that they are palatable; and she must be able to furnish a variety in ways of cooking foods in large quantities, as well as furnishing "well-balanced" meals. She must be constantly on the alert to prevent waste of food, as well as waste of time, by the employees; this necessitates the ability to know and follow up an infinite number of details; to forget even a minor thing said to her by someone whom she chances to meet in the corridor is an unpardonable offense if it results in a patient not getting just what he expected, just when he expected it, and just as he expected it. A well-established system is essential in order to insure meals being served promptly and in the best manner.

These are the things the dietitian must know in order to feed any and all parts of the house. In order to do scientific dietetic work she must know also the chemistry of foods, physiological chemistry, chemistry of nutrition, physiology of digestion, and the prominent symptoms of our most common diseases; she should know some physics, and it is highly desirable that she have some knowledge of psychology.

Where can she get this training? There are many schools in the country where she can get a foundational knowledge of domestic science, though she should have more work in physiology and its allied subjects than is given in most schools. There are a few schools now which are giving more thought to the needs of institutions, but the majority of them have until recently put all their thought and interest in the preparation of teachers. In no school, however, can the dietitian get the hospital angle of dietetics or the practical problems of feeding the sick. When our domestic science schools and hospitals cooperate, then will we be able to train dietitians well. In many cities we have schools giving very good instruction in domestic science and hospitals where much valuable practical work could be done. Great mutual benefit could be derived if a course could be planned wherein the nurses could get some of the valuable teachings of the school, and and it is highly desirable that she have some knowledge of diseases and the practical operation of the institution. At present the only available solution is the course of training offered to pupil dietitians in some of our hospitals, and this has by no means reached the stage of perfection.

A dietitian with a sound fundamental knowledge of domestic science and a physician with a broad medical knowledge may join forces and teach each other while developing a department of dietetics, and this is being done in some instances with much benefit to both parties as well as to the institution. Many of our metabolic diseases need just the treatment that this combined knowledge gives them. Though we have made many discoveries in the short time since scientific dietetic treatment has been practiced, and great advancement has been made in our studies of metabolism, yet we know we have only just begun to realize what a vast deal of undiscovered territory is before us and what an interesting and necessary field it is.

## FREE INSTRUCTION IN INFECTIOUS DISEASES

### New York Health Department Establishes Courses in the City's Largest Special Hospital

The health department of the city of New York has established a free course of instruction to the physicians of the city in diagnosis and treatment of the communicable diseases. The course, which is being given in the Willard Parker Hospital, consists of six clinical and two laboratory lessons, each course to be repeated every two weeks on Wednesday, Thursday, and Friday afternoons. The classes are limited to ten physicians, and those who desire to take the course are asked to register in advance.

The Willard Parker Hospital is the largest of New York's infectious disease institutions, and abundant clinical material is always on hand to insure a very valuable training for those physicians whose experience in the communicable diseases has been limited. The health department of the city has been making some quite rigid requirements in regard to reporting the communicable diseases, and it has finally discovered that disobedience of the laws by the doctors was due rather to want of experience in the diagnosis and treatment of these diseases than to any indifference or willful violation of the rules or ordinances; hence these courses of instructions.

# PHILANTHROPY AND THE PUBLIC HEALTH

Conducted by THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director,
*Department of Family Welfare.*
DONALD B. ARMSTRONG, M. D., Director,
*Department of Social Welfare.*

Please address items of news and inquiries regarding Philanthropy and the Public Health to the New York Association for Improving the Condition of the Poor, 105 East Twenty-second street, New York City.

## Clinics for Necessitous Children

BY J. H. BERKOWITZ

Between 1912 and 1915 the New York Health Department maintained six clinics for the treatment of school children requiring operations for diseased tonsils and adenoids. Owing to the failure to provide further in the department's budget for this work, the clinics have been discontinued. Thus a situation has resulted which lends a timely interest to the achievements of these clinics and to the question as to what other clinical provision the city of New York can make to supplement the work of private hospitals and dispensaries which offer gratuitous surgical and medical services to the needy. A discussion of these problems, based on studies and investigations made by the Bureau of Welfare of School Children of the New York Association for Improving the Condition of the Poor, has been published by the Health Department.[1]

The bureau made these investigations for the purpose of:

(a) Ascertaining the effectiveness of the school children's clinics as a part of the medical inspection system.

(b) Offering such constructive suggestions and aid to the municipal authorities as may appear to be necessary for the advancement of the work.

The report presents the following conclusions:

1. The clinics conducted by the Department of Health have demonstrated their usefulness in these respects:

(a) Thousands of children have been relieved of a serious defect which is not only physically devitalizing in its effect, but is also a cause of backwardness in school work.

(b) They have supplied a long-felt want in certain sections of the city where similar hospital facilities were and still are lacking.

(c) Children of needy parents have been given treatment and care which was beyond their financial means and which in the majority of cases would probably not have been obtained at any of the free dispensaries.

2. The efficiency and value of a system of school medical inspection is judged by:

(a) Ultimate results, as seen in the improvement of health conditions.

(b) The character of treatment for physical defects given to the children and extent of curative results.

The children's clinics have not only achieved such results, but at the same time have furnished the test for the system of medical inspection. This is to be found in the considerable increase in the number of cases treated and cured.

3. As a practical demonstration of approved humane, and safe practice, these clinics have been emulated by other institutions through the adoption of better methods, to-wit:

(a) Operations performed only with general anesthesia.

(b) Post-operative bed care for at least eighteen hours.

4. The closing of the Health Department clinics will cause an increase in the number of children applying at private hospitals and clinics. Some of these are adequately equipped for the treatment and care of children's nose and throat cases fully in accord with the higher standards of practice. Dispensaries and some hospitals do not fulfill these requirements.

The Executive Committee of the Associated Out-Patient Clinics of the City of New York, in a circular letter dated December 17, 1915, urges on its members "that suitable facilities be provided to meet this increased demand on them," and calls their attention to the opinion of the Section on Laryngology and Rhynology of the New York Academy of Medicine, one of the main points of which was:

"The majority of the members of the section believed that both tonsillectomy and tonsillotomy are operations requiring the facilities of a hospital."

The circular letter also calls attention to a resolution of the Public Health Committee of the New York Academy of Medicine, concurring in the conclusions resulting from an investigation made by the State Charities Aid Association, to-wit:

(a) That all adenoid and tonsil operations on children should be done under general anesthesia; and

(b) That hospitals where adenoid and tonsil operations are performed should be equipped to keep their patients in the wards for at least eighteen to twenty-four hours after operation.

In view of the preponderance of opinion among unquestionable authorities on what constitutes proper method and equipment for this work, it now becomes imperative that the school nurses should endeavor to refer all needy cases of children requiring such operations only to those clinics which are known to meet the foregoing requirements.

5. By the establishment of the school children's clinics the city recognized the principle that such facilities should be provided by the community for those requiring them, on the same basis that it provides free schooling.

6. Having thus acknowledged its obligation, the city should continue this work. It is of no consequence what branch or department in the municipal government is charged with it. The need of such special services for school children is urgent.

The Health Department being now relieved of this function, it might be delegated to either of these departments: Charities, Education, Hospitals. The lack of facilities and conveniences for hospital work in school buildings excludes the Department of Education from consideration. Therefore the remaining possibilities are the Charities Department and Bellevue and Allied Hospitals. Altogether, seven municipal hospitals offer possibilities.

The Bureau of Welfare of School Children has made

[1]Free Municipal Clinics for School Children: A Review of the Work of the School Children's Nose and Throat Clinics in New York City and Conditions Which Necessitate Such Institutions. Department of Health of the City of New York. No. 41, Reprint Series, February, 1916.

recommendations to the proper authorities, embodying the foregoing conclusions.

An outcome of the interest of the bureau in this work is the appointment by the health commissioner, Dr. Haven

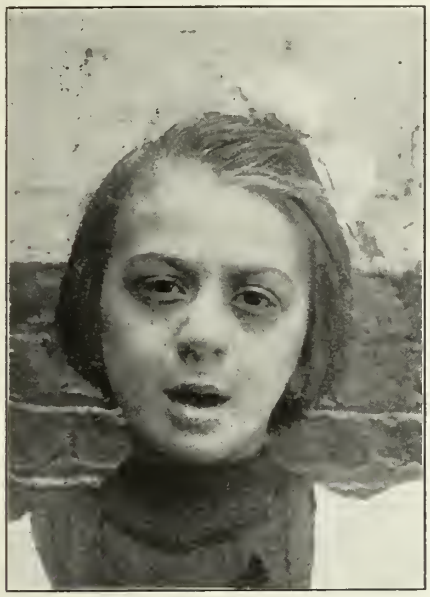


Fig. 1. Case of defective nasal breathing and hypertrophied tonsils, typical of about 10 percent of school children examined for physical defects. Probably half of these are too poor to afford private medical service.

Emerson, of a committee consisting of Dr. John W. Brannan, chairman, Deputy Charities Commissioner Henry C. Wright, Dr. John J. Cronin, Dr. Cornelius G. Coakley, Dr. E. H. Lewinski-Corwin, and Edward F. Brown, secretary, the purpose of which is to stimulate an interest in the enlargement of the facilities in public and private hospitals for approved treatment of nose and throat defects.

An immediate result of this committee's efforts has been the extension of the nose and throat service at Bellevue and Allied Hospitals—Gouverneur, Harlem, Fordham—four in all, and the bringing about of closer cooperation between school nurses and these municipal hospitals for the benefit of school children too poor to patronize private physicians or pay clinics. Without such cooperation many of these patients would find their way to dispensaries having neither the proper facilities nor employing approved methods for this class of cases.

### WORK OF THE CHILDREN'S CLINICS

The investigations of the Bureau of Welfare of School Children included a study of 1,677 case histories in the Health Department clinics, from which the following statistical analysis was derived:

(a) DIAGNOSIS AND DISPOSITION.—The clinical examinations verify the diagnoses made by the medical inspectors, as will be seen from table 1. Of the children examined by the surgeons, 95.8 percent were found to be in need of treatment. This fact is further strengthened by the results shown in table 2, to-wit: that 94.1 percent of the cases needing treatment required surgical operation.

These records are also significant in demonstrating the coincidence of the two defects, hypertrophied tonsils and adenoids, since 81.7 percent of the children needing treatment were found to be suffering from both of these defects, while 7.7 percent were found with adenoids only, and but 0.9 percent with hypertrophied tonsils only.

TABLE 1. RESULT OF CLINICAL EXAMINATIONS

| | Number | Percent of all children examined |
|---|---|---|
| Children examined | 1,677 | 100. |
| Needing treatment | 1,605 | 95.8 |
| Defects found: | | |
| Hypertrophied tonsils and adenoids | 1,370 | 81.7 |
| Adenoids only | 129 | 7.7 |
| Tonsils only | 15 | .9 |
| Very slight adenoid growth | 91 | 5.4 |
| Normal | 72 | 4.3 |

With 94.1 percent of the cases found in need of operation, of the 1,605 cases needing treatment, it is appalling to imagine what the consequences of neglect would be if clinical facilities were not provided for the removal of these serious defects.

TABLE 2. CHARACTER OF TREATMENT REQUIRED

| | Number | Percent of all needing treatment |
|---|---|---|
| Cases needing treatment | 1,605 | 100. |
| Operative | 1,514 | 94.1 |
| Nonoperative | 91 | 5.9 |

The actual operations performed in the clinics studied were 79.4 of the total number of cases needing treatment, the remainder being variously disposed of, as shown in tables 3 and 4. It is interesting to note that only 16 cases out of the 1,605, or 1 percent, were referred to private physicians. This means that inquiry by the school nurses showed these applicants to be in a position to afford the services of private physicians. It does not, however, follow that all these applicants wished to receive free treatment without being entitled to it. In some cases parents sent their children to these clinics through misunderstanding. The dropped cases fall into two groups—(1) those in which the children failed to keep their appointments,

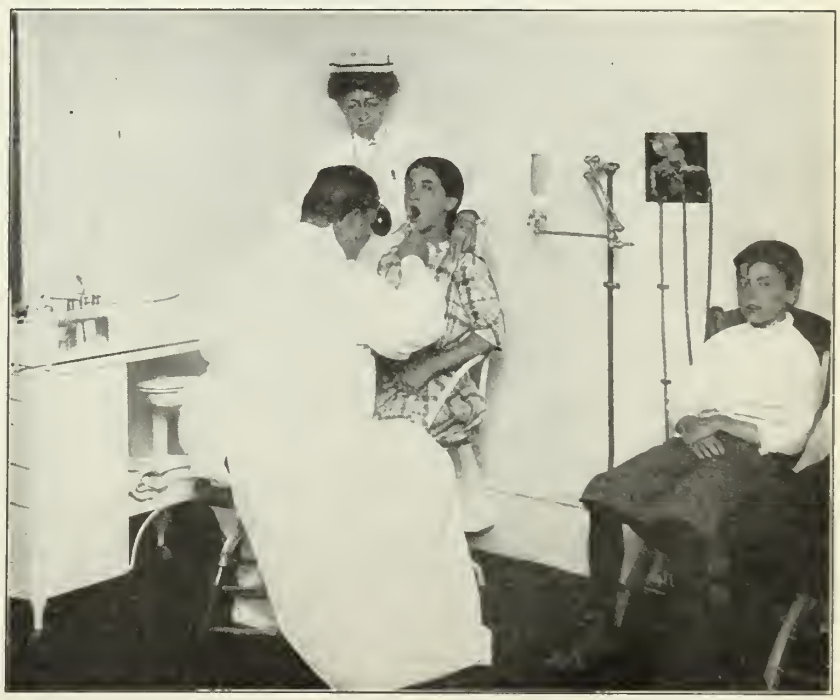


Fig. 2. Examination by nose and throat surgeon in school children's clinic.

and (2) those eliminated for various unstated reasons. Both these classes of dropped cases reach a considerable percentage, as will be seen from tables 3 and 4.

Table 3. Disposition of Cases Needing Treatment

| | Number | Percent of all needing treatment |
|---|---|---|
| Cases needing treatment | 1,605 | 100. |
| Operations performed | 1,141 | 79.4 |
| Medical treatment | 62 | 3.9 |
| Referred to private physician | 16 | 1. |
| Not terminated | 34 | 2. |
| Dropped | 220 | 13.7 |

Table 4. Disposition of Operative Cases

| | Number | Percent |
|---|---|---|
| Cases requiring operation | 1,514 | 100. |
| Operations performed | 1,141 | 76.5 |
| Referred to private physician | 16 | 1.0 |
| Operation refused by patient | 46 | 2.1 |
| Appointment not kept | 153 | 10.0 |
| "Operated elsewhere" | 7 | .4 |
| Dropped for various reasons | 151 | 10.0 |

(b) Duration of Treatment.—Under this head is considered the length of time intervening between the child's first visit to the clinic and the date of his discharge. It is the rule to make the appointment for operation, if possible, within a week from the day of registration at the clinic, although the extremes reached are one day in one direction and two months in the other. The average duration is nine days.

Twenty-four hours is the usual length of time spent in the clinic by a child who has undergone an operation. Not more than 10 cases were found where this stay has exceeded twenty-four hours. Practically all discharged cases are marked "cured" on the case record cards, in the majority of cases the success of the operation being determined by an examination on the day of discharge. In some cases it has been found necessary to have the patient reexamined at a later date, and the results of these final examinations all appear as "O. K." in the records. In all, 105, or 9.2 percent, final examinations have been made subsequent to day of discharge.

Table 5. Number and Percent of Final Examinations and Cases Found "O. K." After Operation

| | Number | Percent Operated | Percent Examined |
|---|---|---|---|
| Operated | 1,141 | 100. | ... |
| Final examinations | 105 | 9.2 | 100 |
| Pronounced "O. K." | 105 | 9.2 | 100 |

The lapse of time between discharge and final examination averaged three days.

Table 6. Number of Days Between Discharge and Final Examination of 105 Operated Patients

| Days | 1 | 2 | 3 | 4 | 5 | 7 | 10 | 11 | 12 | 31 |
|---|---|---|---|---|---|---|---|---|---|---|
| Patients | 12 | 45 | 7 | 31 | 5 | 2 | 1 | 2 | 1 | 1 |

(c) Distances Traveled.—Accessibility is one of the deciding factors in the serviceability of the free clinic. To be accessible to the necessitous child, the clinic must needs be within walking distance from home or school, thus eliminating the expenditure of money for carfare. This renders the clinic a neighborhood institution, as shown by the computations based on 1,440 cases where the distance traveled was determinable. Allowing one mile as a reasonable distance for a normal child to walk, it would appear that not quite half (47.6) of the children coming to the clinics live within a radius of one mile from it. On the other hand, adding to the number of children within the one-mile limit those coming from a distance of two miles or less, the result shows that more than two-thirds (78 percent) of the children came from within the two-mile zone.

The number of those coming from distances within four or five miles is still considerable. Beyond the five-mile zone the numbers become trivial, yet not insignificant, if they are taken as an indication of preference for these clinics by people living beyond these "neighborhood" areas. The average distance of travel for the 1,440 cases is exactly two miles.

Table 7. Distances Traveled by Children From School to Clinic

| Within miles | Number of children | Percent of total 1,440 cases |
|---|---|---|
| 1 | 655 | 47.6 |
| 2 | 459 | 35.1 |
| 3 | 151 | 10.5 |
| 4 | 104 | 7.2 |
| 5 | 16 | 1.0 |
| 6 | 8 | .... |
| 7 | 3 | .... |
| 8 | 1 | .... |
| 9 | 2 | .... |
| 10 | 1 | .... |

To summarize, the foregoing data establishes these vital facts:

(a) Medical inspectors make correct diagnoses in all but a very small percentage of cases. When examined by the surgeons, 95.7 percent of the children referred to the clinics were found to be in need of treatment.

(b) Nearly all children suffering from defective nasal breathing and hypertrophied tonsils require operation. In this group 94.1 percent did.

(c) The "neighborhood" character of the clinics is indicated by the fact that nearly half the number of the children treated came from within one mile of the clinics, while the total percentage of those coming from within one and two miles is 82.7 percent.

(d) The need of extensive following up is shown by the fact that 20 percent of the children registered for operations failed to receive them, while less than 10 percent of those operated on were reexamined at a later date. In this may be seen a shortcoming in cooperation between schools and clinics.

### Mount Sinai to Become a General Hospital

Definite plans for the further expansion of Mount Sinai into a general hospital have been submitted and the construction is under way, the present extension bringing the hospital plant into proper proportion in order to take care of all recognized branches of medicine and surgery.

The plan includes the contruction of new buildings, with equipment, to cost $1,800,000. Actual work has been started on the pavilion to be known as the "Guggenheim Memorial," and also on a pathological laboratory and a modern servants' dormitory.

Serious consideration is being given to the construction of a new children's hospital, as well as alterations in the present children's pavilion, in order to convert the latter into a semi-private ward.

Due to the increased activities of the hospital, many of the clinical departments are greatly in need of room to accommodate the installation of special equipment necessary to bring the institution to the highest standards. The present architectural activities are of sufficient extent and arrangement to provide accommodation for all special departments and to place Mount Sinai on a plane with the leading institutions in this country.

# DISPENSARY AND OUT-PATIENT WORK

Conducted by MICHAEL M. DAVIS, Jr.,
*Director of the Boston Dispensary.*

Please address items of news and inquiries regarding Dispensary and Out-Patient Work to the editor of this department, 25 Bennett street, Boston, Mass.

## How to Make a Dispensary Efficient

In the business world, under the stimulus of financial profit, efficiency has been made a watchword. How sad to think that efficiency has been so little considered in the field of philanthropy, where the only gain is the pure reward of virtue!

Let every medical and lay worker in a dispensary hereafter clasp efficiency to his bosom! In the belief that such will soon be the general habit, the following suggestions are offered for the consideration of all interested in this vital subject.

One of the great problems which confronts every large dispensary is the prompt and proper classification and registration of patients. For registration, institutions today depend on the laborious eliciting of identifying information by verbal conversation, while for conveying each patient promptly to his or her clinic, through a strange and often tortuous building, dependence is placed solely on transportation by the patient's personal legs. How remarkable in the second decade of the twentieth century, when moving sidewalks, pneumatic tubes, and finger-print systems are at the beck and call of the world, that the dispensary, that star or starfish among institutions, should depend on mere legs and letters!

Let us change all this and bring the moving stairway and finger-print system to the forefront in every dispensary. As each applicant for treatment enters the door, a trained, courteous usher should meet him or her with the inquiry, "Please show your card." If a card is not shown, the fact that the applicant is a new patient is thus indicated, and the patient is expeditiously and softly placed upon a moving stairway on the usher's left side, ladies being handled with white gloves. With old patients, on the other hand, who are already familiar with the routine, a mere wave of the usher's forefinger[1] will serve to locate them upon the moving stairway at his right. These stairways should not, as in those crude structures found in some mercantile enterprises, be merely for standees. Chairs should be provided, and, as will be shown, this will be a substantial economy in administration.

One of the great purposes of the moving stairway, but not its only service, is the transportation of all the human material of the dispensary—namely, the patients—to the uppermost story. In a manufacturing establishment of large size the raw material is brought first to the top floor, so that thereafter all its motions are aided instead of impeded by gravity, until it passes out at the ground floor as a finished product. Why not apply efficiency principles to patients, human beings capable of appreciating what is done for them?

As the new patients comfortably leave the ground floor, a finger-print clerk steps on the stairway. Passing from one patient's chair to another, he causes each patient to impress upon appropriate cards his finger-prints in duplicate, the cards being then placed upon the right-hand arm of the chair. The moving stairway proceeds with measured deliberation, calculated to allow this task to be performed by the time that the patients reach the second story. At this point the finger-print clerk steps off, and, sliding down a fireman's pole, is ready to ascend again with the next batch of newcomers.

On the second floor a social worker steps to the moving platform and passes likewise from patient to patient, observing, with the aid of a spotlight, the garments, the amount of dignity and millinery or furs of each patient, along with those other indications by which trained social workers are accustomed to judge financial eligibility. A question or two may also be asked, as the speed of the moving stairway is adjusted so as to enable an efficient worker to complete her task by the time the last patient in her batch has reached the third story.

It is apparent, we may say, that the number of stories of a dispensary and the height of each story may be suitably designed according to the number of patients which are expected to be received. This is an important principle of construction.

On the third floor, the social worker having returned to the second floor by the chute, a medical admitting officer steps upon the stairway, and rapidly assigns each patient to the appropriate clinic after a glance at the symptoms. The patient's cards, which during this time have remained upon the arm of his chair, are quickly marked by the admitting officer before they reach the fourth story. Then the officer slides swiftly back to the third floor, to begin again his efficient round.

When the new patient has reached the fourth floor, he steps into the large admission hall, where nothing remains to be done but to receive his fee, give him one of the two admission cards, retain the duplicate, and send the patient speedily on his downward way to the clinic which awaits him.

Meanwhile the old patients have come up their stairway, which may move at a quicker and more exhilarating rate. On the fourth floor they show their identification cards, received at previous visits. These are instantly identified by the finger-print expert. The medical record is extracted from the files and sent to the proper clinic by pneumatic tube, thus arriving sufficiently in advance of the patient to serve as a pleasant notice of his approach.

The economy and efficiency of this plan are so evident as to disarm comment. It is obvious that nothing is required to install this system except a moving stairway, an expert in the Bertillon finger-print system and a little printer's ink.

A slight consideration of the mechanical aspect of the matter, however, shows that the maximum economy cannot be attained if the engine which operates the stairway must lift the dead weight of many patients and administrative officers while the downward-moving stairs are left vacant. Were the up and down weights properly balanced, far less power would be required. The system at this point requires the addition of a little ingenuity. The following method would yield both medical and financial benefits.

The important problem of reducing flesh has already led to the establishment of "obesity classes" in many clinics. The members of such clinics or classes should be

[1] An usher with some experience as a traffic policeman might be employed with advantage.

assigned their treatment rooms upon the topmost story, not far from the admission hall in which the patients leave the stairways. As soon as the obesity patients have been seen at their clinic (they should come early), each should promptly be given a ride *down* the moving stair. It is evident that one patient of this group would on the average balance at least two and one-third of the ill, lean, or young persons, who constitute the great majority of the sick poor. The obesity patients should, of course, be compelled to walk back upstairs. Not more than three to seven round trips a morning should be necessary. The pleasure of the downward trip and the exercise of the return journey would undoubtedly contribute to the medical treatment which they are receiving.

Should the number of patients in the obesity clinic of any dispensary be too small to give sufficient balancing power, selected children of school age may be given the privilege of riding downstairs, two to a chair, as a reward for their visit to the doctor or dentist. In some clinics it would be practicable to charge a small fee for this pleasant ride down the dispensary's roller-coaster, thus assuring to the institution a modest but worthy source of income.

## NEW $400,000 HOSPITAL FOR CALIFORNIA COUNTY

### Modern Plant to Accommodate 250 Patients Being Erected at Sacramento

Plans drawn by Architect R. A. Herold for a new public hospital for Sacramento county, Cal., to be erected at Sacramento at a cost of $400,000, exclusive of equipment, have been approved by the board of county supervisors and construction work is under way.

In a general way, the plans for the new hospital call for an administration building, a nurses' home, six general wards, an infectious ward, a service building, garage, laundry, and lighting and power plant. Two hundred and fifty patients will be accommodated.

A style of architecture typical of California has been adopted, and the buildings will be so arranged that the nearest neighbors will be at least 200 feet from any building. A rather elaborate system of beautifying the grounds, which will include a sunken garden facing the administration building, with a driveway from the main thoroughfare on either side, has been devised. The administration building and all of the wards will be connected by tunnels and corridors.

The exterior construction will be tile and concrete, with roofs laid with mission tile. The floors will be of reinforced concrete and the interior partitions of metal studs, laths, and plaster.

The mechanical plans include complete electrical layout, such as an electric signal system for nurses and latest improved elevators and dumb-waiters, modern heating and ventilating systems, vacuum cleaners, and the best hospital sanitary plumbing.

The operating rooms, sink rooms, baths, and toilets are to have tile floors and glass wainscoting, and the interior finish throughout the buildings will meet all sanitary requirements.

In laying out the ground plan, provisions have been made for the enlargement of the plant as may be required in the future.

Dr. Louise Richmond has resigned the superintendency of the Methodist Hospital at Hutchinson, Kas., and will engage in the practice of medicine with her husband, Dr. D. W. Richmond. Miss Frances Shouse, a Missouri nurse, is the new superintendent at the Methodist Hospital.

# SOCIAL HYGIENE
# VENEREAL DISEASES

Conducted by WILLIAM F. SNOW, M. D.,
*General Secretary, The American Social Hygiene Association.*

Please address items of news and inquiries regarding Social Hygiene to the editor of this department, 105 West Fortieth street, New York City.

### Venereal Disease Quack and Sex Medicine Makers[1]

The Oregon Supreme Court has upheld the law forbidding the advertising of sex medicines, which makes it a misdemeanor for any person "to advertise or publish any advertisement intended to imply or to be understood that he will restore manly vigor, treat or cure loss of manhood, lost power, stricture, gonorrhea, chronic discharges, gleet, varicocele, or syphilis, or any person who shall advertise any medicine, medicinal preparation, remedy or prescription for any of the ailments or diseases enumerated in this act." On May 14, 1914, an indictment was filed against Edwin A. Hollinshead and Irving R. Stearns, for violating this statute. The advertisement exhibited was as follows:

NEW DISCOVERY FOR MEN, can be used secretly any place. ZIT COMPLETE STEARNS', $3 postpaid. Plain Wrapper. Written Guarantee to cure most severe cases of GONORRHEA or GLEET, if directions are completely followed, or MONEY BACK. ONLY QUICK, SAFE REMEDY. NOT AN INJECTION. STRICTURE IMPOSSIBLE. No Pain or Bad Taste. Complete directions given with each package. BY OUR ONE EXCLUSIVE AGENT.

THE J. A. CLEMENSON DRUG CO.,
Cor. Front and Morrison Sts.,
PORTLAND, OREGON.
Spell it out Z-I-T.

After the court had overruled a demurrer to the indictment, the defendants were convicted and fined $100. The decision of the Supreme Court on the appeal of the case was in part as follows:

The next point presented is that the act is unconstitutional and void in that it is class legislation and is a violation of the constitutional guarantee of equal protection of the law. This may well be considered in connection with the final proposition that the act is void because it is not within the legitimate scope of the police power of the state and is a violation of the constitutional provision that no person shall be deprived of life, liberty, or property without due process of law.

For many years it has been recognized by publicists and legislators that some drastic action is necessary to check certain social evils, and to protect youthful and inexperienced humanity not only from easy access to vicious and immoral practices, but also from the schemes of designing men, who, for the sake of financial profit, would prey on the calamities of the unfortunate who have sowed the wind and reaped the whirlwind. Further than this, it has been thought that the act of spreading broadcast, by means of advertising, the idea that certain venereal diseases are easily and cheaply cured is against public policy in that it has a decided tendency to minimize unduly the disastrous consequences of indulging in dissolute action. These views were evidently the moving principle of our legislators in the passage of the act under discussion. The purpose of the act is clearly in the interest of the public

[1]The illustrations accompanying this article are presented by courtesy of the Oregon Social Hygiene Society.

Fig. 1. The sort of advertising that has disappeared in Oregon.

morals. It is not class legislation, for it applies to all who may be engaged in a like business. Similar legislation has been held valid in other states on both contentions. In the case of People v. Kennedy (Mich.), 142 N. W. 771, the court, in passing on a similar statute, says: "It is the duty of the court to give effect to a legitimate legislative purpose plainly indicated if it can reasonably be done, and not construe language so as to invalidate an act where the language is fairly susceptible of a construction consistent with validity. The act appears to be a reasonable police regulation."

Again, in the case of Kennedy v. State Board of Registration, 145 Mich. 241, the plaintiff, a physician, sought to enjoin the defendant from revoking his certificate for having violated a statute which, in part, reads thus: "And provided further, after the passage of this act the board may at its discretion revoke the certificate of registration, after due notice and hearing, of any registered practitioner who inserts any advertisement in any newspaper, pamphlet, circular, or other written or printed paper relative to venereal diseases or other matter of any obscene or offensive nature derogatory to good morals."

This was held to be a valid exercise of police power. In the case of State v. Giantvalley, 143 N. W. 780, Mr. Justice Bunn, of the Supreme Court of Minnesota, says: "It is argued that, because defendant was admitted to the bar of Minnesota before the statute was enacted, the law deprived him of a vested right to advertise that he was a specialist in divorce matters, and is therefore unconstitutional. Granting that defendant's license to practice his profession gave him a right to advertise his proficiency in any branch of it, such right was subject to regulation. The legislature decided that advertising for divorce business was contrary to public policy, and certainly the decision was justified. Rights of property far more valuable than any right defendant may have had to advertise his calling have been obliged to yield to considerations of public health, safety, and morals. We hold that the statute is valid."

We might multiply similar citations, but it is not necessary. We regard the statute in question as a valid exercise of the police power of the state, and the judgment of the trial court is affirmed.

This decision of the Supreme Court may well be looked on as the decisive victory in the contest that has been going on in Oregon for some five years against medical quackery in all its forms, and especially against the exploiters of alleged venereal disease cures. The early stages of the campaign were marked by strong local agitation at first in Portland and later in other cities of the state to influence newspapers to discontinue the publication of advertisements of medical specialists of all sorts. At a public meeting in Portland in 1912 the case against the quack was strongly presented by President William T. Foster, of Reed College, particularly with reference to a case in which an unfortunate victim, after being fleeced out of his savings, had killed two of a venereal institute's staff as well as himself, with the result that several of the more influential newspapers of that city adopted the policy of excluding such advertising from their columns, though this action involved a loss of many thousands of dollars of revenue to them. The campaign of education went on throughout the state until, in September, 1914, the Social Hygiene Society reported: "There are now no regular 'quack ads' published in any newspaper in the state of Oregon. One paper prints a small announcement of one quack in its personal column. The two or three who advertise on their windows and walls are compelled to announce cures for various diseases of both sexes because of the new law. There are no quack advertisements of men's specialists in the state."

In the meantime, by order of the State Board of Health, there was published a placard calling to the attention of men the seriousness of venereal diseases, and framed copies were posted in the places used for similar advertising by medical specialists, including the toilet rooms of railroad stations and day coaches. An advisory department was also established to provide reliable information and advice by personal interviews or by correspondence to persons suffering from venereal diseases. By these means, and by the society's circulars and cards of information, the direct attack on quack practitioners was supplemented and strengthened by spreading abroad the truth about these diseases and by giving sound advice

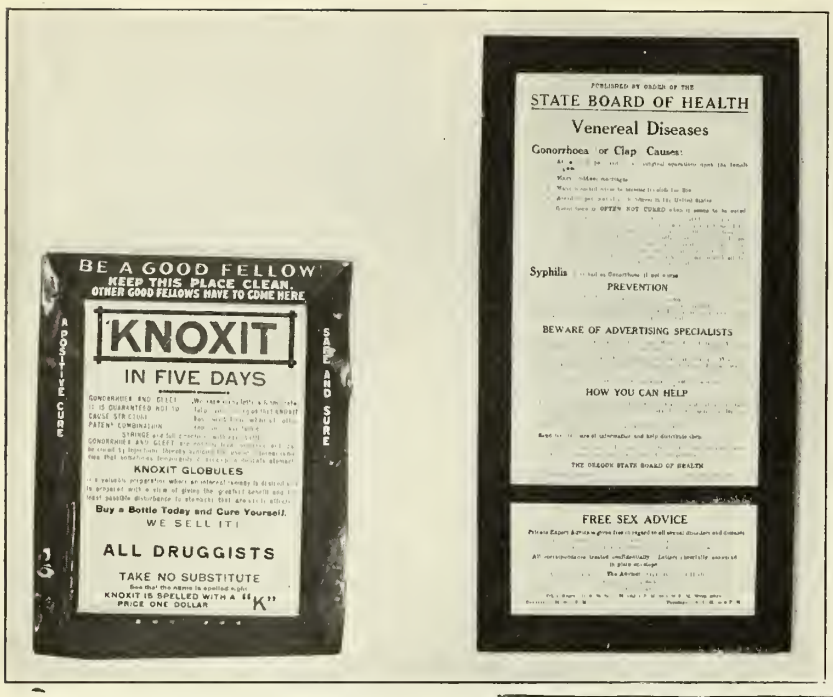



Fig. 2. The old and the new. The illustration on the right is a State Board of Health placard; the one on the left is a notice of a kind often found in men's toilet rooms, but not in Oregon.

free of charge as to the necessity of proper treatment.

In 1913 the state law which had made possible the prosecution of fraudulent medical concerns was strengthened by the passage of an act by the state Legislature specifically directed against the advertising of sex medicines. The text of this law is as follows:

Sec. 2095. Any person who shall advertise or publish any advertisement intended to imply or to be understood that he will restore manly vigor, treat or cure lost manhood, lost power, stricture, gonorrhea, chronic discharges, gleet, varicocele or syphilis, or any person who shall advertise any medicine, medicinal preparation, remedy or prescription for any of the ailments or diseases enumerated in this act shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than $100 nor more than $1,000, or by imprisonment in the county jail for a period of not less than six months nor more than twelve months, or by both such fine and imprisonment. Any owner or managing officer of any newspaper in whose paper shall be printed or published any such advertisement as is described in this act shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than $100 nor more than $1,000, or by imprisonment in the county jail for a period of not less than six months, or by both such fine and imprisonment.

It is on this law that the decision quoted above was rendered. Oregon's success in ridding itself of the advertising quack is indicative of a state of public sentiment awakened by publicity and education the like of which has been aroused locally in several cities, though not to the point of securing statewide results.

In New York city no daily paper printed in English now admits the advertising of the venereal disease quack, and in Chicago, thanks to the activity of the *Tribune*, such advertising has practically disappeared, along with the most of the venereal quacks. The more reputable papers the country over have taken a like stand—for example, the St. Louis *Star*, the New Orleans *Item*, the Seattle *Sun*, and the Minneapolis *Journal*. New York city in the spring of 1915 closed up all of its "medical museums," "museums of anatomy," and the like, together with their accompanying "medical institutes."

The fight against the makers and purveyors of venereal disease patent medicines is a more difficult one than that against the quack doctors, but through the attack on their advertising, on which the extent of their business almost entirely depends, other states may accomplish what Oregon has done. On this point Mr. Samuel Hopkins Adams, in an address before the Society of Sanitary and Moral

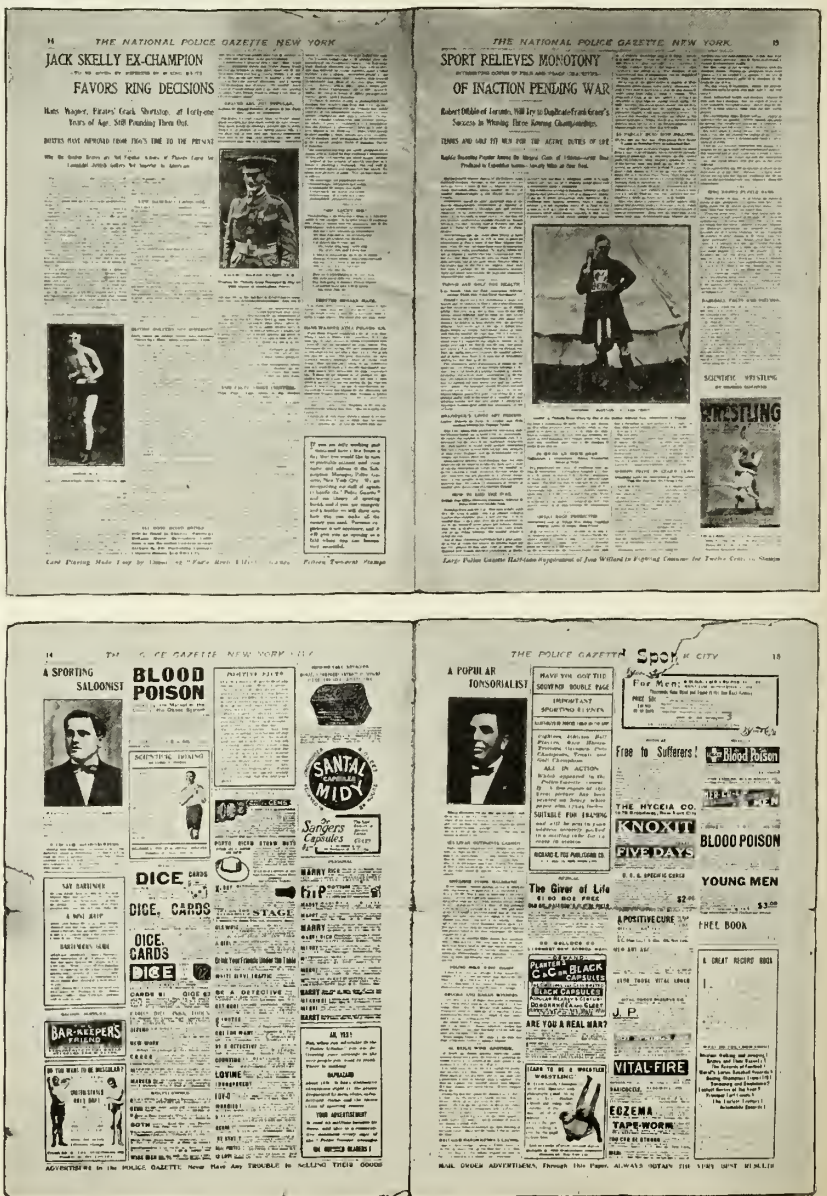



Fig. 3. Four pages of the Police Gazette as issued in the Oregon and regular edition.

Prophylaxis in New York city, said: "If any combination can be made of great business and social organizations, of great newspapers and of men whose business it is to live by advertising and whose honor it is to keep that a clean, decent profession, I believe that any city could be cleared of venereal quackery."

While the direct results of driving the quacks out of business and curbing the activities of the sex medicine makers are beyond measure for the good of their individual dupes and victims, there are indirect benefits of even greater and wider reaching effects confidently to be looked for. Every city or state that drives out from its newspapers and other places the advertising of the quack and sex medicine man, to that extent eliminates a source of positive misinformation, a debasing and misleading sex pedagogy. In this way aid is given to constructive work of social hygiene, by giving its educational agencies access to a public, perhaps uneducated, but, so far as quacks and sex medicine makers are concerned, not miseducated.

J. H. F.

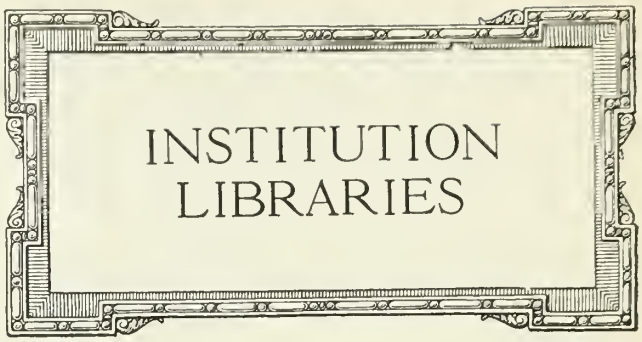
## CALIFORNIA URGES TUBERCULOSIS BILL

### Proposed Federal Law Providing for Subsidy for Care of Nonresidents Greatly Needed

The California State Board of Health has indorsed the federal bill which will provide for the payment of a subsidy to hospitals maintaining standards of equipment, diet, and care established by the United States Public Health Service, and caring for tuberculosis patients who are not legal residents of California.

This action was prompted in view of the following facts: the death rate from tuberculosis in California and other southwestern states is very large, reaching, for example, the rate of 362.5 per 100,000 population in one county of the state, and a corresponding rate of 192.5 for the state as a whole; this high death rate is largely due to the influx, from all parts of the country, of tuberculosis patients, who are, for the main part, in advanced stages of the disease and financially unable to provide proper care for themselves, and, moreover, unable to exercise proper precautions to prevent others from becoming infected; 75 percent of the patients dying of tuberculosis in California have an annual family income of less than $1,000; furthermore, 27 percent of all children who have received state aid as orphans or half orphans during 1914 lost one or both parents from tuberculosis. There are only 906 beds available for tuberculosis patients in county hospitals, and the average yearly numbers of deaths is over 5,000. The counties cannot bear alone the double burden of caring for the resident and nonresident tuberculous, even with the recently provided state aid for the former. Recent investigations by the United States Public Health service show that there is an annual migration of between 10,000 and 15,000 tuberculosis patients to the western and southwestern states, and 30 to 50 percent of these die within six months of their arrival, and, further, that 40 to 90 percent of all deaths from tuberculosis in the west and southwest are natives of other states.

In the March number of THE MODERN HOSPITAL it was erroneously reported that the Alexandria Hospital, Alexandria, Va., had recently installed a new x-ray outfit and a Columbia treatment transformer. It is the Alexandria Hospital, conducted by Dr. L. F. Schmauss at Alexandria, Ind., which has made these improvements, but it is the Virginia institution for which the $50,000 building is to be erected.




Conducted by E. KATHLEEN JONES.
*Librarian McLean Hospital, Waverly, Mass.; member Institutiona Libraries Committee, American Library Association.*

Please address items of news and inquiries regarding Institution Libraries to the editor of this department, McLean Hospital, Waverly, Mass.

### Book Reviews

The hospital library censor sat in her office surrounded by some twenty books of new fiction, of which eight or ten already had been discarded and none retained for the library. Of the discarded ones, some were morbid, some were cheap and trashy, some were merely "cheerful" to the verge of boredom; one or two were, to put it mildly, unreserved. With a sigh that a perfectly nice mid-Victorian mind should be obliged to dabble in the analytics of decadent modern literature, the censor put forth a languid hand for the next in order.

It happened to be "Drusilla With a Million," by Elizabeth Cooper, a modern fairy story for grown-ups, with an old lady instead of a young one for the princess—an old lady suddenly transplanted from the "Home with a big H," where she was the penniless and overworked drudge, to a beautiful mansion of which she was absolute mistress, with servants at her command and a million dollars at her disposal. This promised to be interesting, and with increasing delight the censor read it, approved, and began with it her pile "for keeps."

Refreshed by this wholesome, if slight, little story, she took up "The Boy With Wings," by Mrs. Oliver Onions. This is a pretty little love story of a boy aviator and his girl bride, somewhat marred by padding, but with an ideal ending, if one believes the old pagan saying that "Whom the gods love die young." It is not a sad ending, and it is the only one possible for happiness. This made two books for the library.

The next was "The Real Adventure," by Henry Kitchell Webster, of which the censor had seen a very cordial review. She did not stop until she had finished the book, but she cannot recommend it for a hospital, for it would arouse too much criticism. In the first place, it is exceedingly modern, even boasting an alienist with Freudian theories and other tremendously clever people who talk of all the latest "isms" and settle the most bewildering questions with the utmost confidence. In the second place, it is too frankly analytical. In the third, it is too thoroughly exasperating, in spite of its undeniable interest, for it doesn't get anywhere. In the end they are just where they were in the beginning—still "short-circuited." The story, in brief, is this: The girl wife runs away from the husband whom she adores and who adores her, because he won't talk business to her and won't let her take care of her twin babies herself, feeling that they are safer with a trained nurse. She purposes to fit herself for life, and

in the last sentence of the book she stands, presumably fitted, "holding a twin in each capable and highly trained hand." Now, the censor would like to know what in her two years of ballet dancing and designing of stage costumes she learned that would enable her to compete successfully with the trained nurse in the care of twins? However, it was with very genuine regret that it was rejected.

The Coast of Adventure," by Bindloss, added a third to the library pile. This is a fairly good story of adventure, in which the heroes smuggle arms to a Central American republic on the verge of a revolution.

Then came some more for the rejected pile, including one which opened well. But in the second chapter a nurse suddenly goes insane and kidnaps a child. We are here introduced into an "insane asylum," with its stereotyped inhabitants. With all due respect to authors, we who have lived among the insane for years suggest that these authors, if they must write about such subjects, be incarcerated in such a hospital (by the way, they haven't been called asylums for years) for a time, so they will know how the insane really do talk and act. There is just one novel known to the censor dealing with this subject which is true to life, and that is "The Lunatic at Large," published in 1905 by J. S. Clouston, son of the celebrated English alienist. This is an extremely clever and amusing story of the adventures of a patient who had forgotten his identity, and who escapes from the hospital while in a slightly hypermanic state. It is needless to say that this is not a book for patients in a mental hospital, but others will enjoy it exceedingly.

Have you an "Index Expurgatorius" for the use of the staff only? If so, place in it "Those About Trench," by Edwin Herbert Lewis, for a more entertaining book the censor has not read for a long while. True, it is crude in many ways, and it really is composed of two separate stories which have little to do with each other, but it is a book you cannot leave until you finish it. Trench is a young Chicago physician, a specialist in children's diseases, who is thoroughly material in his views of life, impregnated with all the modern scientific ideas of religion. The frankness with which these views are discussed constitutes the great reason why patients with a mental bias should not read it, for they will be apt to seize on these ideas and distort them to an injurious degree, not realizing how, in the end, Trench himself, as well as those about him, grow out of these impersonal, materialistic views into something more human and more divine. Also, some of the surgical operations are described rather too vividly to please patients in any hospital. Still, all this is in what might be called the author's first manner. Trench gathers round him a "menagerie" of aliens, the center of whom is Saadi Sareef, a most likable young rascal who soon usurps the center of the stage, and here begins the second story, in which we follow the fortunes of Saadi from Peshawar in India (where you feel that you are threading the mountain passes with Kim) to the breathless end in the Balkans. It is a book that stands head and shoulders above the average.

The censor laid "John Bogardus" on the pile "for keeps," with a sigh of satisfaction and great content. This is a big book—a very human document, to use a much overworked phrase—but John Bogardus is human, and, were one to write pages about him, there is no greater one word which so fittingly describes him and the book. There is humor in this book, and pathos, and growth, and strength, and humanity; above all, humanity. We look forward to more books by Mr. Chamberlain as good as this one.

## Traveling Libraries in Hospitals

BY MIRIAM E. CAREY,
Supervisor of Institution Libraries, Minnesota State Board of Control, St. Paul, Minn.

Systems of traveling libraries have been operated in the rural districts of this country for many years by library organizations of various sorts, and the results of their experience can be used as guides by those who wish to introduce traveling libraries into hospitals and other institutions in which reside large numbers of persons, many of whom would be glad to have something to read.

In hospitals for the insane there is always a group of patients who like to read and who exhaust the collection of books in the library before they leave the institution. These patients often see the book reviews and advertisements in the magazines; their curiosity is aroused about certain publications, and they want to read the new books just as much as any other person. One way to satisfy this demand is by means of traveling libraries operated from some central point.

The practicability of such a system has been tried out in the state of Minnesota, which has a circuit of five libraries going the rounds of the institutions for the insane. This year (1916) sees the third series of these collections in operation, so that the scheme has ceased to be an experiment.

When the first set of libraries was started, each of the five institutions interested subscribed $25, and the combined sum was spent for 125 volumes and the cases needed to transport them. Each library remained one month at each hospital, and on a given date was shipped to the next place in the circuit. At the end of six months each institution kept the books received in the last exchange, and sent the empty boxes back to headquarters. These boxes were filled with new sets of books, and were started out to make the same rounds as the first series. This method is still in operation, and by it each hospital has the opportunity to examine 125 fresh books every six months and to add 50 books a year to its present collection.

Good team work at each hospital is absolutely necessary to make a plan like this work smoothly, and in Minnesota it has cheerfully been rendered by the several persons in charge of the libraries at the various hospitals. On them devolves the task of rounding up the books at the proper times, and in a large hospital this is a rather difficult thing to do, making it very necessary to have a good charging system of book-cards and book-pockets in operation.

When the date occurs for changing the libraries, someone at headquarters (in Minnesota it is the library supervisor) sends to each of the librarians a list of the next set of books to be received, a shipping tag for use on the box to be sent away, a return post-card by which the receipt of the new library and its condition is to be acknowledged, and a note stating the date of shipping.

If it happens in some hospital that one or two books are not returned promptly, the library is shipped without them. If they are found within a week or ten days, they are sent on by parcel post, but, later than that, the institution at which they were lost buys new copies, which are put into the proper libraries in order to keep the series intact. It usually occurs that after many days the mislaid books reappear, and they are then added to the permanent library of the hospital which lost and replaced them. It is to be expected that there will be some loss through the actions of destructive patients, but this should be regarded as part of the business and should not debar the use of books by the other patients.

Books coming in this way at regular intervals from the

outside world are attractive to the whole hospital; not only the patients, but also the employees, look forward eagerly to the exchanges.

As the purpose of the hospital traveling library is to provide recreation and change of thought, the books are selected with no other object in view. The collections are not educational, except incidentally, nor of special literary value; they are made up almost entirely of fiction, with any popular books on the questions of the day which may be available and a few purely humorous books, which are always well liked by some of the patients. Editions are chosen, so far as is financially possible, for good print and paper, illustrations, and attractive and serviceable bindings.

As to size and construction of the traveling library cases, there is now a standard, and the number of books in each unit has also been established; it has been found best to send groups of 25 or 50 volumes in boxes made to accommodate exactly that number. The outside dimensions of the smaller cases are 28 by 10 inches, with a depth of 12 inches. For convenience in carrying, these cases have stout iron handles on both ends, and in front there are doors which are kept securely closed during transit by a bar of iron which slips into clamps. These boxes can be transported by freight or express without crating, and can be used as bookcases after the bar is removed and the doors are opened.

Anyone who wishes to see lists of the books which have circulated in the Minnesota hospitals can have them by sending a request to the Minnesota State Board of Control, St. Paul, Minn.

### Notes of the Libraries

In his report of the Central Indiana Hospital for Insane, 1915, Dr. Edenharter writes as follows: "At an institution of this character, one of the chief problems is to provide the means to direct the attention and divert the thoughts of patients into channels calculated to relieve their condition. . . . Occupation as a remedial agent is utilized whenever the circumstances permit. In addition to this and the amusements, it is necessary to provide appropriate reading material—not only books and magazines, but daily and weekly newspapers. To meet this need, the institution has installed a circulating library of over 2,000 volumes, to which new and well-selected books are added as occasion demands. The library record is an evidence that it is well patronized and appreciated. The employees have access to its volumes."

* * *

The superintendent of the general hospital at Olean, N. Y., has asked Miss Maud D. Brooks, librarian of the Olean Public Library, to give a talk to the training class of nurses on books and reading.

* * *

From the Public Library of Cadillac, Mich., and from the City Library Association of Springfield, Mass., have come lists of "cheerful books" which these two libraries have prepared because of the constant demand for books for the sick room.

* * *

In the American Medical Association Bulletin for November 15, 1915, is a most interesting account of the Luzerne County (Wilkes-Barre, Pa.) Medical Library, founded in 1897 in two rooms, now owning 5,800 volumes and housed in a new, fireproof building, with reading room and place for meetings. Following are the things which they consider essential for securing a medical library:

1. There should be a small committee of enthusiastic members who believe in a library, who are untiring and unselfish in their devotion to the work, who will not consider failure a possibility, and who will not be discouraged by the indifference or half-heartedness of others.
2. There should be a place for the library, which may be permanent, with room for expansion.
3. One or more persons should be present at certain hours to assist members in finding what they want in the mass of material accumulated.
4. Everything possible, old and new, should be secured, and nothing thrown away.
5. Without fail a complete set of the *Index Medicus* and "Index Catalogue of the Surgeon General's Office" should be secured. The current numbers and, as funds permit, back issues should be bought. An excellent working index is the *Guide to Current Medical Literature*, issued semi-annually by the American Medical Association.
6. Members should be encouraged to contribute books and journals by gift or loan, and should be urged everlastingly to do this.
7. All periodicals donated or purchased should be bound, that they may be of use for future reference. This should be done as the volumes are completed.
8. The Association of Medical Librarians should be joined, to secure the benefit of the library exchange.

The same bulletin announces the recent formation of the San Diego Medical Library Association, and their intention to develop in time a practical, well-organized medical library which shall be at the service of all whom it attracts, irrespective of membership.

* * *

At the Massachusetts General Hospital, Boston, an index to the reports from 1873 to date has just been completed. Its references form a continuation of Bowditch's history of the hospital.

* * *

The Treadwell Library added 289 volumes during the year 1915, giving a total number of 9,160 volumes. Their pamphlets total 7,689. They have registered an attendance of 2,687 readers. Total expenses for the year, $2,-351.05.

* * *

Don't forget the institution library session at the meetings of the National Conference of Charities and Corrections to be held in Indianapolis, May 10-16.

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The new Flint-Goodrich Hospital at New Orleans, representing an expenditure of $50,000 and accommodating 50 patients, was dedicated March 4. The ceremonies were attended by a number of prominent persons, including Mayor Behrman; Dr. Oscar Dowling, state health officer; D. D. Moore, of the *Times-Picayune*; Dr. William I. Haven, of New York, secretary of the American Bible Society; Bishop Wilbur P. Thirkield; Dr. Charles M. Melden, president of the New Orleans University; and Dr. R. E. Jones, editor of the *Southwestern Christian Advocate*. The hospital is an outgrowth of the Sarah Goodrich Hospital formerly operated in connection with the Flint Medical College, and is the leading negro hospital in a territory containing a negro population of more than a million. A training school for nurses is maintained, and the hospital is the only one in New Orleans where negro physicians and surgeons may practice. The institution is in charge of Dr. R. T. Fuller, who, with Dr. Melden and Bishop Thirkield, has been very active in developing the institution to its present size and efficiency.

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The selection of a site and the development of plans for the proposed Jeanes Hospital at Philadelphia will be pushed to an early conclusion, according to the Westchester (Pa.) *News*. The sum of $2,000,000 was bequeathed by the late Anna T. Jeanes for the erection and maintenance of a hospital, and the money became available two years ago, but a disagreement ensued between the Philadelphia Yearly Meeting of Friends, who were interested in the bequest, and the trustees of the Jeanes Hospital Corporation over the financial management. The differences have now been adjusted, and it is understood that the hospital will be built this year.

# PREVENTION OF BLINDNESS MATERNITY

Conducted by CAROLYN CONANT VAN BLARCOM, R. N.,
*Secretary National Committee for the Prevention of Blindness; Chairman Committee on Prevention of Blindness and Midwives, National Organization for Public Health Nursing.*

Please address items of news and inquiries regarding Prevention of Blindness—Maternity to the editor of this department, 130 East Twenty-second street, New York City.

## The Eyesight of School Children

BY HENRY COPLEY GREENE,
Field Agent for Conservation of Eyesight, Massachusetts Commission for the Blind.

School children whose eyesight is very defective are so exceptional that educators, school physicians, and even school nurses sometimes forget how serious their plight may be. Exceptional as these children are, they present, especially to the school nurse, a problem requiring time and tact for its solution. In an average public school population of some 10,000 children, for example, about 3 percent, or 300 children, will probably be found whose eyes have never been examined by any expert and whose visual acuity is one-half normal or less. This statement[1] means that in a city of 150,000 inhabitants the half dozen nurses who should be at work among the 10,000 public school children will each be confronted with about fifty cases, every one of them in need of an expert examination, many of them with parents requiring repeated visits to explain this need, and still others requiring eyeglasses for which their families can pay either not at all or only by slow installments.

If there are only two school nurses in our city of 150,000, each will, of course, be face to face with about 150 such eye cases; and if, as unhappily may be true, the city boasts not a single school nurse, the plight of these children may be serious indeed. The chances are that, with the best will in the world, neither the school physician (if he exists) nor the hard-worked school teachers will find time to see that these children's needs are met.

One hardly realizes how crucial the situation of some of these children may be until one has met young men and women, past the school age, whose education either has amounted to nothing or has been won at too great a cost. Among such victims of public neglect is, for instance, a man with high myopia—extreme short sight—described by a social service head worker at the Massachusetts Charitable Eye and Ear Infirmary. This man, she says, "was sent to us one day, ragged, emaciated, almost helpless without his glasses, which had been broken a few days before. His record with the public and private charities of Boston and other cities was a very bad one—idleness, drink, immorality, neglect of his children. The hospital found a condition of high myopia, which had been corrected only after the man had passed his twenty-fifth year, when he had thoroughly learned the lesson of idleness, and the rest had followed easily. All his life he had been handicapped; in school, where his fellow pupils who had better vision left him far behind; later, when work was difficult to find and, for him, almost impossible to keep; and later still, after glasses had been found to help his vision, by the habit of idleness and its attendant evils, acquired through little fault of his own. There was no doubt about his very bad record, but the hospital finding left much doubt as to his individual responsibility."

Fig. 1. Girl with phlyctenular keratitis.

Nor is this instance isolated. The fact that over 16 percent of 1,000 girls committed to a state school for delinquents[2] have defective sight (vision half normal or less) suggests that their delinquency is due, in part, to the irregular schooling and undisciplined habits which so easily result from ocular defect. This does not mean that poor sight is the sole cause of delinquency. In many cases low mentality is clearly the cause, while in others delinquency has occasioned disease, which in turn has impaired the eyesight. With all allowance made, however, the fact that low vision is four or five times as prevalent among these delinquents as among average school children, together with their individual stories, make it plain that the moral dangers involved in poor eyesight should not lightly be forgotten.

Fig. 2. International test. With normal vision the direction of the break in the ring can be recognized at 5 meters.

Unless a child's sight is excessively poor, his intellectual progress is usually less endangered than his general health or even his eyesight. Though the average child with low vision tends to drop behind in school, many such children are so bright or persevering that they keep abreast of their normal fellow pupils, or even forge ahead. In cases of myopia this is especially dangerous, for in the process the children's eyes may grow more and more ab-

[1]Based on two years' study in six Massachusetts cities, where the vision of over 90,000 children had been tested by the teachers.

[2]Page 47 Eighth Annual Report Massachusetts Commission for the Blind.

normal—so abnormal, indeed, that in later life they may become practically blind. And even in cases of defects that are unlikely to increase, the ocular effort involved in ordinary school work may cause troublesome nervous symptoms, or even lower the general level of health.

A certain number of children, not fit candidates for any school for the blind, require special education to preserve general health, prevent nervous disorders, or conserve what eyesight they have. These children are relatively few, yet in Springfield, Mass., for example, a city of only about 90,000 inhabitants, a special "semi-sighted class" has recently been opened with a dozen pupils and a good sized waiting list; and similar classes are in full operation in Boston, New York, Cleveland, Cincinnati, and Toledo.

To provide such classes for children with low vision is beyond the average educator's or nurse's immediate reach.

Fig. 3. Semi-sighted class in one of the public schools of Springfield, Mass., established September, 1915, as a result of the investigation of the Commission for the Blind, with the cooperation of the Springfield schools and Perkins Institute.

Teachers in small places, however, can do much for such children by giving them individual care—by abolishing home lessons, emphasizing the oral and manual sides of their training, finding for them books in the coarsest type, having their lessons in badly printed books read aloud to them, writing out their arithmetic examples in coarse figures two or three inches high, doing, in short, everything that ingenuity can suggest to save these children from any arduous or sharply discriminating use of their eyes. This sounds like "a large order." That it can be done, however, I know from having seen just such sight-saving work carried on for a child with dim vision by a school principal in that half-isolated region, our Massachusetts Berkshire Hills.

Meantime, for the school nurse there is sight-saving work to do for other children with eye diseases or defects. The commonest serious eye disease, and one for which nurses should watch, even among their charges' younger brothers and sisters, is known as phlyctenular keratitis. A child with inflamed and watering eyes, who cannot stand the light, generally has this disease. The disease shows itself in one or more swellings or blisters, sometimes a mere pin point in size. These occur at the junction of the white and the "cornea," or colored portion, of the eye, or on the cornea itself. These "blisters" cause inflammation, which in turn causes pain, watering of the eyes, and dread of the light. Unless the trouble is skillfully treated, it is likely to recur, and to result in ulcers which may ultimately leave the eyes scarred and the sight dim; and if the school nurse is not very watchful, the damage may be done before the child has even entered school.

In certain parts of the country trachoma is a still more serious menace; and there are, of course, still other eye diseases which require the school nurse's attention. Of all these difficulties it is here enough to say that any abnormal appearance of the eye (except ordinary sties) should receive immediate expert care, and that this care should be followed up until results are definitely secured. For the rest the discovery and correction of errors of "refraction" require much time and labor.

In Massachusetts a preliminary eye examination is made each year by the school teachers. Elsewhere the children's eyes are examined either by school teachers or by the school physicians, or again by the school nurses. Whatever the system, the actual examination is too often perfunctory. Moreover, the test charts generally used make it impossible to examine children who do not know their letters. In practice this excludes the first grade. By the use of a chart provided with test symbols instead of test letters, serious visual defects in first-grade children can be discovered. A year ago I found one teacher who had herself made such a chart with measured symbols, and who had satisfactorily examined her first-grade pupils. Such a teacher is exceptional. Such charts, however, can be cheaply procured for use in the lower classes. It has even been suggested that their routine use for all pupils would have certain advantages—for example, preventing occasional too clever pupils from memorizing the letters. A possible test chart of this kind is the so-called international.

A child who cannot accurately read or describe such a chart at half the normal distance is probably in serious need of care. Even at the cost of much effort, therefore, it is essential to get children with apparently defective eyesight adequately examined after such a first examination. If glasses are prescribed, do not let the parents buy them "across the counter," but make sure that the prescription is properly filled. Only in this way can you make sure that the children get the glasses which may mean good health instead of bad and clear sight instead of defective.

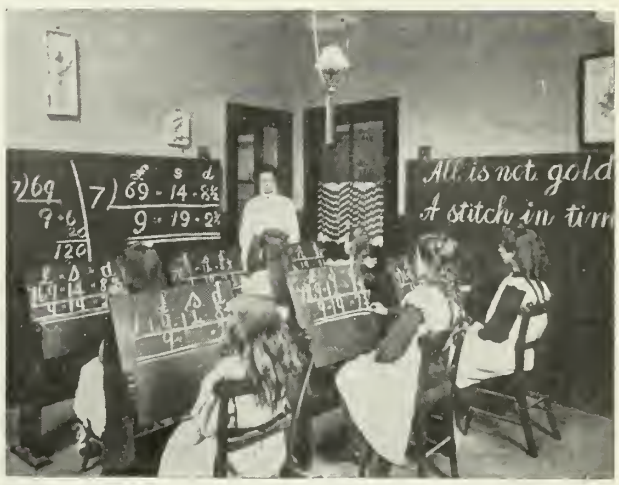


Fig. 4. Arithmetic lesson in the myope class in London. The teacher uses the long wall blackboard, while every child has its own blackboard as a part of the myope desk. Note the heavy, strong lines of the chalk writing and the bold, upright characters. The ordinary thin-lined, straggly writing of the lecture theater is not adapted to these classes. Blackboard writing is an art to be cultivated.

As already suggested, it is often only by personal explanation to parents, by persistence and by persuasion, that permission for the necessary examination can be se-

cured. What can be accomplished in this way, even by a single visitor, is shown by about three months of part-time "follow-up" work with the families of 99 children in Worcester, Mass. In two cases the parents positively refused advice, in two instances the child was found to be mentally defective, and in four cases glasses were found to be needless. For 71 children glasses were prescribed, which make their continuance in the regular classes unobjectionable; 22 were found to need special instruction in a class for children with defective sight.

In view of these results, achieved under difficulties, should not more regular provision be made for explaining to parents the needs of their handicapped children? In importance, such work is hardly outclassed by the work of the school physicians, whose assignment to every school is required by law in several states. School nurses, school visitors, etc., paid and unpaid, are already doing this necessary work in many cities; but their numbers are seldom sufficient. It it not, therefore, time to consider laws requiring of all cities the assignment of at least a minimum number of nurses or visitors to their public schools? One such nurse or visitor to every 1,500 or 2,000 pupils could nearly keep abreast of the average necessary work. With no less provision can the problem of disease and defect among school children be adequately met.

### Sea View to Choose Director

The municipal civil service commission of the city of New York is about to hold a competitive examination for the position of director of Sea View Hospital and Farm Colony; salary to be $4,380 per year, with house and maintenance.

The commission is extremely anxious to secure as many well-qualified candidates as possible, and it is interesting to know of their thorough canvass of all eastern hospitals by letter and the following form:

"All candidates for the position are requested to submit applications on or before March 2 at the Municipal Building, room 1400. The subject and weights are: experience, 4; duties, 3; oral, 3; 70 percent required on each subject. Candidates will not be assembled for the written examination, but will be called for the oral. A qualifying physical examination will be given. Duties: general supervision of Sea View Hospital (tuberculosis) and of the adjoining Farm Colony for aged poor. Each institution, with a present census of about 1,000 inmates, is under the immediate care and management of a superintendent. The medical and hospital service at Sea View extends to the Farm Colony, while the work of the latter also covers both institutions. It will be the duty of the director to correlate the work of hospital and Farm Colony, to exercise general supervision over the working staff, to see that inmates receive proper care and attention, and that buildings and grounds are kept clean and in good condition.

"Requirements: candidates must have had at least two years' administrative experience in an approved institution, tending to qualify them for the position sought, or the equivalent. Candidates must be 21 years of age; salary includes house and maintenance for incumbent and family.

"Requests for application by mail must be accompanied by self-addressed envelope (9½x4¼ inches), bearing 4 cents in stamps. Applications returned by mail must be fully prepaid."

Miss Irene Murdoch, superintendent of the Citizens' General Hospital, New Kensington, Pa., recently tendered her resignation because of ill health. The board of directors, however, refused to accept the resignation and granted Miss Murdoch indefinite leave of absence instead. While Miss Murdoch is regaining her health, the hospital will be in charge of Miss Edith McNaughton, the assistant superintendent.

# FOREIGN CORRESPONDENCE

### In the Mediterranean War Area

Seldom can the medical service of any army have had a more difficult task to perform than had the Royal Army Medical Corps in the Dardanelles. At the end of April and during May the fighting was incessant, the total casualties numbering 38,536. Fighting continued through the summer, and in the period from July 18 to August 21 the killed, wounded, and missing amounted to 41,000. The wounded were placed on board the hospital ships as soon as possible, the ships in this instance being, technically, "casualty clearing stations" rather than "base hospitals," as would be the case under ordinary circumstances. As will be remembered, the fighting force was exposed to heavy shell fire throughout the operations, and the work of the hospital staff had to be carried on subject to the same risks. There were no roads, and the wounded who were unable to walk had to be carried from the firing line to the shore, exposed to shell the whole time.

The work of the hospital ship "Soudan" in the Dardanelles, has been described by Fleet Surgeon Trevor Collingwood, R. N. This vessel is a converted transport of 6,696 tons, and accommodates 202 bed cases, with an additional 100 in an emergency. At the end of April both military and naval forces were landed under heavy fire, and 429 wounded were received on board, 382 cases being admitted on one day. Again, in the latter part of May 411 cases were admitted during five days, nearly all of them injuries more or less serious. Perhaps the heaviest work was experienced by Dr. René Celles, in charge of the French hospital ship "Burdigala." This vessel was an accessory ship, without proper equipment or adequate medical staff. On the night of May 8 500 wounded were taken on board; all of them had to be dealt with by Doctor Celles singlehanded, without even a nurse to help him, and with very scanty supply of surgical instruments and dressings. In a war of unprecedented magnitude such occurrences must happen sometimes, however regrettable they may be. One cannot make omelets without sometimes breaking eggs.

The total number of killed and wounded during the July operations in this area amounted to 37,982, of whom 8,099 were killed. It was not possible to find a suitable site for a hospital on shore. A casualty station was established at Cape Helles, at the southern end of the Gallipoli peninsula; but this was so much exposed to shell fire that the wounded had to be brought out on barges to the hospital ships, from which they were eventually transferred to base hospitals at Lemnos, Alexandria, and Malta. This last-mentioned island is particularly well suited for the accommodation of sick and wounded, and has numerous and capacious hospitals available. Here and in Egypt are stationed a number of consulting physicians and surgeons. The wounded landing at Alexandria were either conveyed direct in motor ambulances to the various hospitals in that city or placed in specially arranged ambulance trains for

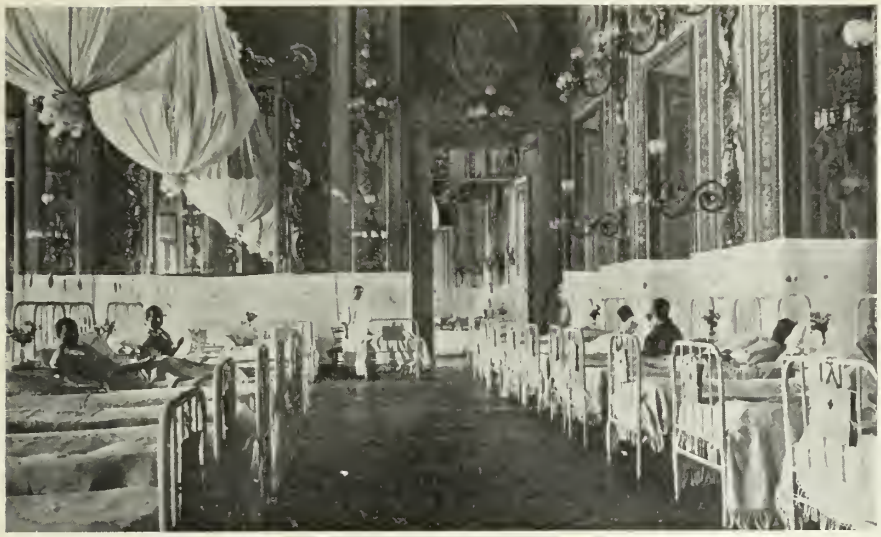

Fig. 1. Ball room in the Quirinal Palace, Rome.

conveyance to Cairo. The enormous number of men wounded during the Dardanelles operations heavily taxed both the administrative resources of the army medical service and Red Cross organization and the surgical staffs of the base hospitals. Within three weeks nearly 20,000 wounded were conveyed to Alexandria, several ships having 800 or 900 cases on board, with only three medical officers, a few orderlies, and no female nurses, to attend to the injuries, many of them of a very severe character. As time went on, of course matters straightened out, but, when the pressure was greatest, only the worst cases could be landed in Egypt, some 3,000 having to be taken on to Malta.

In Egypt large hospital accommodation exists at Alexandria, at Cairo, and at Suez. There are hospitals administered by the Red Cross organization at each of these places, and in addition the Red Cross has established convalescent homes in various parts of the country. From October to April the climate is, as Murray says, "genial and uniform, unsurpassed by that of any other country in the world." Malta also, though hot in the summer, is healthful, and for the greater part of the year has a delightful climate. Now that the so-called "Malta fever" (which has never been by any means confined to Malta, but has prevailed over the whole Mediterranean area) is practically extinct in the Malta Garrison (only three cases occurred in a strength of 6,600 in 1912), no better place could be wished for as a hospital base. The same may be said of Egypt during the greater part of the year; life can be lived out of doors, the recuperative processes of nature have free play, and surgical cases do well. Dust and mosquitoes have to be and can be dealt with effectually.

The Citadel Hospital at Cairo, the principal military hospital in Egypt, has been established in Mehemet Ali's palace within the fortress, on relatively high ground, and in a healthful situation. Cairo and its citadel are probably familiar to many of our readers, but not perhaps the interior of the old palace that for many years has been used as a hospital for British troops. The rooms are very spacious and airy, and from its relatively high situation the building gets the benefit of whatever movement of air takes place in Cairo, and there is generally an evening breeze from the desert. The hospital consists of a center and two wings, and has two floors, accommodating in all 500 patients. On the upper floor the center block is used for surgical cases, the right wing for medical cases, while in the left wing are wards for skin patients, mental cases, and the quarters of the nursing staff. The hospital chapel, also in this wing, is a richly decorated apartment, formerly the principal bathing chamber for the ladies of the harem. Before its occupation by the British in 1882 this building had been used as a storehouse and offices. After the battle of Tel el Kebir, the British having reached Cairo the next day, and it being considered necessary that a considerable force should be stationed in the city, the principal medical officer searched for a suitable building for a hospital, and fixed on this place, chiefly attracted probably by its high and relatively airy situation. It was in an indescribably filthy condition, but after free use of disinfectants, soap and water and fresh air, it was made habitable, and has remained the principal hospital for the army of occupation ever since. Captain L. B. Cane, R. A. M. C., describes it as "not only one of the finest, but probably the most interesting, of all the military hospitals in the Empire."

As regards Malta from a hospital point of view, an item of interest is afforded in the fact that at Valletta the military sick and wounded are partly accommodated in what is probably the longest room—i. e., the longest chamber—occupied as a living and sleeping apartment that exists anywhere in the world. This is the famous "Long Ward," measuring 503 feet in internal length, 35 feet in width, and 32½ feet in height. This room is within 10 feet of the entire length of Westminster Abbey, including Henry VII's Chapel.

Hospital accommodation for casualties from the Medi-

Fig. 2. Convalescents in the gardens of the Quirinal Palace, Rome.

terranean is extensively provided in Italy. In Rome itself the royal palace of the Quirinal (the usual residence of the king when in Rome) has been given up by his majesty for the treatment of the sick and wounded. Many of our readers are probably familiar with the Imperial City and its palaces. The accompanying views (Figs. 1, 2, 3) are of interest, as they show portions of the palace (now used as hospital wards), to which access is not allowed to travelers or the public under ordinary circumstances.

The conditions obtaining on board a hospital ship in the Mediterranean and the procedure followed have been well described by Dr. Hubert Chitty. He refers to a ship (not named) capable of carrying 350 cot cases and the same number of "walkers." The staff consists of a fleet surgeon, R. N., a consulting surgeon, and nine surgeons, all

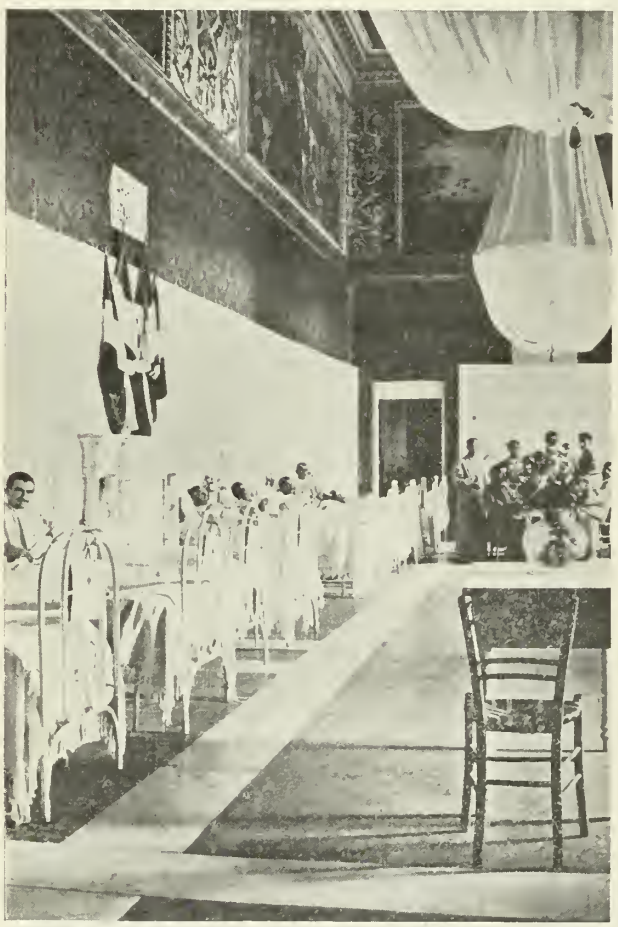

Fig. 3. Throne room in the Quirinal Palace, Rome.

drawn from the royal naval volunteer reserve, or holding temporary commissions, except one naval medical officer. There are four nursing sisters, and a sufficient number of attendants, either "sick bay ratings" of the royal navy or St. John ambulance men. The vessel lies anchored at a convenient spot, and the cases are brought off in barges towed by picket boats. When the party arrives alongside, the walking cases are first taken off; then the cot cases are placed, stretcher and all, in "cot carriers," and hoisted on board. The walking cases are fed, wounds dressed, and the slighter cases sent ashore, the more serious ones being kept on board. Those requiring immediate attention, such as operation or dressing under an anesthetic, are passed to the theater. It may be four or five days or more before the ship is filled up. On the other hand, every cot may be occupied in the course of twenty-four hours, besides some hundreds of walking cases being received, attended to surgically, fed and sent ashore again. It is evident that to cope with work on this scale there must be a perfect system of organization. It is gratifying to learn that the Turks respect hospitals and hospital ships, do not interfere with the rapid evacuation of the wounded, and allow the hospital ships to anchor close to the land unmolested. Mr. Tennant stated in the House of Commons in October that forty-nine hospital ships were regularly engaged on this service of the reception and transport of wounded.

Mr. John Morley, F. R. C. S., of Manchester (captain in the Territorial Royal Army Medical Corps), has given a very interesting account of the work of a field ambulance and its surgical activity in the Gallipoli peninsula. As a rule, a field ambulance is primarily used for the purpose of conveying wounded toward the base, rather than for carrying out treatment, except in the most urgent cases. But the experience of this war has taught us that, for badly soiled wounds, even twelve hours is too long to wait before performing operation if operation be necessary. One of the deep gullies on the Ægean shore, by excavation and leveling with picks and shovels, was in a few days so transformed as to be capable of accommodating forty stretcher cases, while a deep little recess off the main gallery was roofed over with tenting and wagon covers and made into an operating theater. The illustration shows the improvised theater and the conditions under which abdominal section was successfully performed.

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The first unit of the new Central Hospital, erected at Stony Island avenue and East Fifty-seventh street, Chicago, jointly by the Illinois Central Railroad and its 60,000 employees, was formally opened March 4. Besides officials representing the railroad and its employees, prominent medical men of the city and from other places were present at the opening. An address on the relation of the medical profession to industrial development in America was delivered by Dr. Joseph C. Bloodgood, of Johns Hopkins University. The building is a handsome three-story fireproof structure, with accommodations for 125 patients. Although it is to be devoted primarily to the care of sick and injured employees of the Illinois Central road, the institution will receive general emergency cases when space permits. A special feature of the hospital is its large private rooms. There are twenty-one of these, and they are said to be twice as large as the ordinary hospital bed room. The wards also are roomy, and not more than four patients will be placed in any ward. There are a number of 2-bed wards. Three general operating rooms, one emergency operating room, a Zander room, and a hydrotherapeutic department have been fitted up. The hospital will not operate a training school. About twenty-five doctors and graduate nurses will comprise the regular staff. Dr. G. G. Dowdall will be surgeon-in-chief, and Miss Mabel Christie, superintendent. Dr. M. H. Swan, a graduate of the Johns Hopkins Medical School, will have charge of the laboratory, and Miss Helen Jones will supervise the operating room. In addition to the initial unit now completed and in use, the plans for the institution provide for the ultimate erection of a home for nurses and other employees, and also of a wing which will increase the capacity of the hospital to 300 beds.

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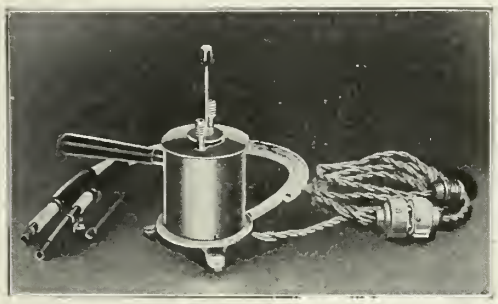
The first shovelful of earth in the excavation for a new home for the Presbyterian Hospital, San Juan, Porto Rico, was turned by the superintendent, Miss Jennie Ordway, on March 13. The building, which is to be a modern structure of reinforced concrete, will be financed by the woman's board of home missions of the Presbyterian Church in the United States, and is estimated to cost $150,000. The present hospital, consisting of frame buildings, was dedicated in 1904. Last year it treated 22,198 persons. It developed from a dispensary founded by Dr. Grace Atkins, now Mrs. Robert Holmes, who later appealed to the Presbyterian mission board to establish the hospital.

# NEW INSTRUMENTS AND APPLIANCES

VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.
Please address items of news and inquiries regarding New Instruments and Appliances to the editor of this department, 327 Southeast avenue, Oak Park, Illinois.

### Electric Vapor Thermophore

The application of heat, when properly applied, is of course one of the oldest forms of treatment for the relief of congested conditions, though one which is rightly carried out in some form by nearly all hospitals and sanatoriums. The electrically heated vapor thermophore, as



Electric vapor thermophore.

illustrated, offers a convenient and safe appliance which should interest those who use warm vapor in their treatment cases. The apparatus replaces many of the more cumbersome types of inhalers and the even larger croup tent used after laryngeal operations. The design permits

Method of using the electric vapor thermophore.

the production of a very considerable amount of vapor—more, it is claimed, in proportion to the size of the apparatus than can be had from other forms of inhalers. The containing chamber is surrounded by an electric heating unit, arranged with a regulator so that any desired degree of heat may be obtained.

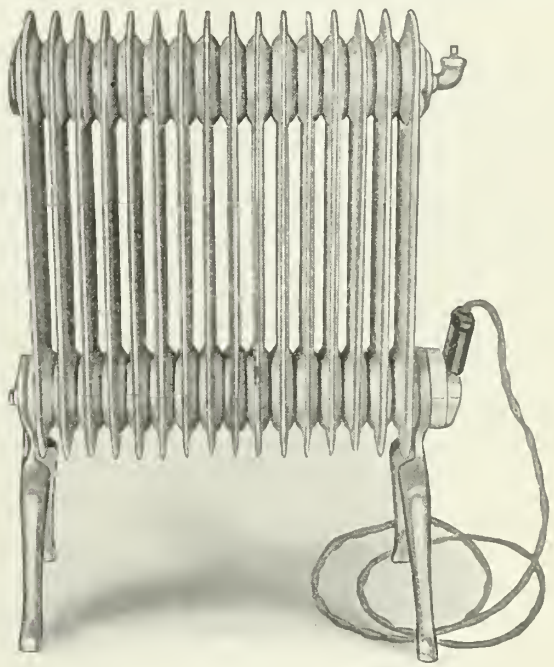
The steam chamber is made of aluminum and has no seams, thereby reducing the possibility of leakage to a minimum. Two rubber tubes are connected to the steam chamber through the cover, in which there is another opening, the size of which may be instantly controlled. This opening is for the admission of air and the escape of steam. In this manner the temperature of the air vapor mixture in the chamber may be regulated, being one of the important features in the design of the apparatus.

The whole device is contained in a nickel-plated metal jacket. The apparatus has now been in use a sufficient length of time to prove its value, and is extensively used at the Battle Creek Sanitarium with a great deal of success.

### Electrically Heated Radiator

Very frequently during the early fall or late spring it is desirable to maintain a higher temperature in private rooms and wards, which, however, is both expensive and inconvenient when it comes to operating the steam plant of the hospital. In such cases the electric radiator as illustrated will be found of considerable value. At an expense of from 1 to 4 cents per hour, according to the rates charged for current, this electric radiator may be operated by simply connecting the attachment plug to a convenient socket. The radiator is portable, weighing but sixty-five pounds when full, and is made with polished feet, so that it can be pushed from one room to another without danger of marring the floors.

As there is no flame, as in the case of a portable gas stove, there can be no consumption of oxygen from the



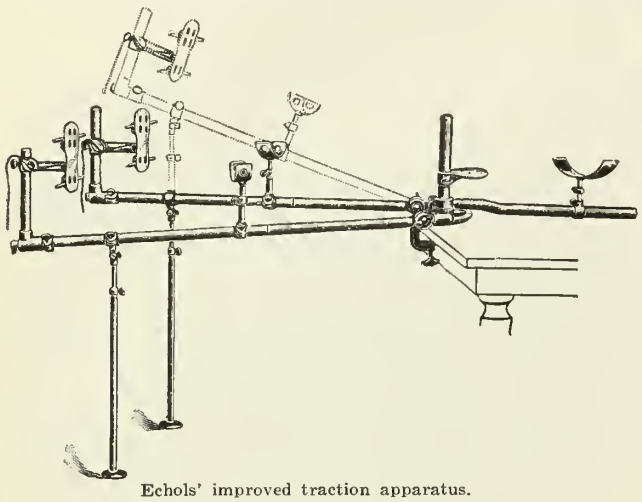
Electrically heated radiator.

air of the room, and, of course, no gases are given off. The heating unit is so wound that the production of steam is impossible, thereby making it a perfectly safe and simple apparatus to use. The radiator is built in two sizes—one size is 18 inches long, 6 inches wide, and 24 inches high, with a heating surface of 22½ square feet of radiation; the second size is 24 inches long, 6 inches wide, and 24 inches high, with a heating surface of 31½ square feet of radiation. The smaller size, it is stated by the manufacturer, the Rathbone Manufacturing Company, Grand Rapids, Mich., will heat a room 10 x 12 feet and 8-foot ceiling, or its equivalent, to 70 degrees in winter weather and the large size a proportionate area.

### Improvement on the Echols Traction Apparatus

An earlier model of the apparatus illustrated below was devised by Dr. C. M. Echols, of Milwaukee, Wis., several years ago, for the purpose of making traction when applying plaster casts to the extremities in cases of fracture of the long bones, for applying bone plates of steel, ivory, etc., as well as for plaster dressings in the ambulatory treatment of fracture or hip disease.

Since then several orthopedic surgeons have invented other apparatus for the same purpose, and while some of them are very ingenious, they are rather complicated and



Echols' improved traction apparatus.

expensive. The cost of the Echols traction apparatus is such that it is within the reach of all who have considerable of this work to do, and with the new improvements recently added it should prove more serviceable than ever.

The improvements consist of a pair of telescoping leg rests which support the extension bars at any desired degree of elevation. In addition a clamp is applied by means of which the apparatus is fastened to the edge of the table instead of being laid on the top of the table or on the floor.

The extension bars, being jointed, allow the legs of the patient to be spread apart so that the operator may work freely between the lower extremities. The back rest which has been added can be moved on its supporting bar and placed in such a position that it will not be in the way when applying body casts or spinal jackets.

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### Surgeon's Seamless Arm Stocking

Under the above title Messrs. Sharp & Smith, of Chicago, have recently put on the market a seamless garment, which has at once become popular with the surgeons who have had an opportunity to give it a trial because it has such a wide field of usefulness in the doctor's office as well as the hospital operating room.

It is well known how difficult it is to apply a cotton or gauze bandage smoothly and evenly to serve as a protection to the skin under a plaster of paris cast. With this stocking, however, a smooth surface is secured, and proper apposition of the fractured bones is facilitated; the comfort of the patient is also made more certain because the proper shape of the garment prevents wrinkling, which occurs sometimes even when the well-known tubular material (stockinet) is used for this purpose.

The value of its use in the operating room will be at once apparent when the garment is drawn over the bare arm and the rubber glove drawn over the lower cuff. It affords the operator complete protection, and is much superior to the long-sleeved gown or detached sleeves, which have to be fastened with safety pins, etc.

For office gynecological work, in obstetric work or applying dressings in the homes of patients, it will be found equally valuable as a protective and a time saver. There are many other occasions on which this device can be used

Surgeon's seamless arm stocking.

to great advantage, such as holding dressings in place on the arm or leg, which, as a rule, cannot be held securely for any length of time without resorting to the use of adhesive strips, which are rather uncomfortable at times. Their value in emergency and field work will be appreciated, as they can always be kept on hand in a sterilized condition. Inasmuch as the first cost is inconsiderable, and as they can be resterilized and used many times over, they seem very desirable from the standpoint of economy.

The stockings are made in three lengths—13 inches, 16 inches, and 20 inches long—and can be secured at surgical supply houses.

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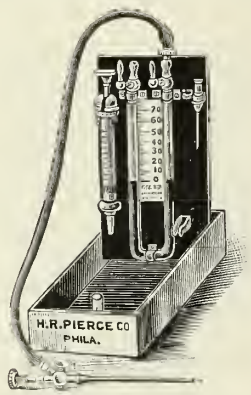
### Mercury Manometer for Determining the Pressure of Cerebrospinal Fluid

DESIGNED BY DR. L. H. LANDON.

It is well recognized that the present methods of determining the pressure of the cerebrospinal fluid are too variable, inaccurate, and unscientific, and therefore the efforts of Dr. Landon to present to the profession a universal method and instrument by means of which reliable data and deductions may be obtained will be universally appreciated.

The Landon manometer and spinal needle seem to meet all requirements, and its simplicity, durability, and exact-




Mercury manometer.

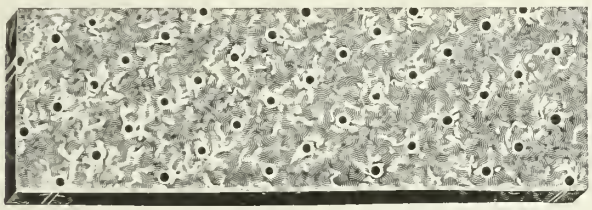
ness should commend it to the use of the medical and surgical professions generally. It consists of a U-shaped mercury manometer of standardized caliber, capable of registering 70 mm. of pressure on a corrected sliding scale. The needle is of platinum, and is connected with the manometer with a thick rubber tube by a three-way cock. This permits the repeated and controlled withdrawal of fluid in any desired amounts during the taking of observations, or prevents the escape of fluid where only

pressure is desired, as in cerebellar growths. The manometer and needle are carried in a metal case, with a small record syringe and needle for local anesthesia or for the injection of medicaments into the spinal theca. All connections are standard and universal. The case, when closed, can be easily carried in the pocket.

### New Splint Material

Perfofelt is the name of a splint material which has recently been put on the market. This material is a chemically treated wool felt. The chemical treatment renders it rigid and board-like, and it is claimed that the rigidity is retained indefinitely. It becomes soft and pliable when immersed in hot water, but immediately begins to harden after it has been molded to the part, and the molded form is retained perfectly. The validity of this claim has been verified by the writer.

Perfofelt is made in two thicknesses—⅛ inch and 3/16 inch. The lighter material is suitable for hand, forearm, foot, and ankle dressings, while the heavier affords ample support for fractures and injuries to the long bones. The superiority claimed for this splint material over anything heretofore used in felt is its ventilation. It is perforated



Perfofelt, the new splint material.

to the extreme limit that will not weaken or diminish its rigidity and retaining power, which provides for the radiation of inflammatory heat, which is so essential to physiological rest and repair. Another advantage possessed by this splint material is that it may be remolded and readjusted to the varying changes of contour and size during the process of repair. The material is furnished in a sterile covering, and the makers claim that it can be kept sterile or resterilized by hot water. The x-rays penetrate the material perfectly, and therefore it is not necessary to remove the dressing when x-ray examination or skiagrams are to be made. The material can be procured from surgical supply houses, or from the National Perfofelt Company, Knoxville, Iowa.

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The Carpenter Steel Works of Reading, Pa., has adopted a very thorough system of looking after its sick and injured employees. In addition to providing a central hospital, seven first-aid stations have been established at as many points through the plant. Each station has a complete first-aid equipment, consisting of a stretcher, with blankets, all kinds of bandages, and medicines needed as disinfectants and for minor scratches and wounds, and is in charge of a crew of from one to three Red Cross-trained men. By a system of reports, every case of accident or sickness is followed up. A lungmotor for asphyxiation cases is a part of the equipment of the hospital. The company physician spends a part of every day at the plant, and a graduate nurse is always on duty.

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It is reported that the Gray's Harbor County Hospital at Hoquiam, Wash., which was erected three years ago, but not used, has recently been put into service. The building cost $50,000, but after it had been completed the county authorities concluded that the cost of maintaining it as a hospital would be more than was required to have the county's sick cared for in other institutions.

# QUERIES AND ANSWERS

### A Superintendent's Troubles

To the Editor of THE MODERN HOSPITAL:

I enclose a record of the work of this hospital for the year 1915, and I would like your opinion on it.

I am unable to economize any more and still give service, and my board seems to think a hospital can be run on less money. Two years and six months ago I came to this hospital and found it "down and out," sufficient pupil nurses were not to be had to enter the training school; system there was none; laboratory in hopeless condition. I have now plenty of applicants for training; in fact, I have been able to effect an affiliation with the state hospital, which will give a post-graduate course of nine months to their nurses.

The laboratory I have reorganized, and I have had for the past year a paid pathologist and a paid assistant (a graduate nurse). The laboratory is now paying the salaries of both chief and assistant from "pay" private room work and "outside work." I have been requested to form a class for doctors to receive tuition under our pathologist, and pay a sum to the hospital for using laboratory and equipment. Some days we do as many as twenty Wassermann's.

A new hydrotherapy department has been installed, with a graduate in charge who has had special training along that line. Treatments are given to house patients on a charge scale; "outside" patients are also treated at a special rate of charges. In time I expect to build up a paying proposition.

The diet kitchen is now in charge of a dietitian, who is also a graduate nurse; all pupil nurses serve three months under her supervision, and *all* cooking for private patients is done by them, including the formula feedings for the children's department.

I have personally looked into every department, and I utilize all waste material. In the kitchens all fats, skimmings from broths, etc., bacon rinds—in fact, anything that cannot be used for frying—are saved and I make soap from them. I make on an average 150 gallons per month. I have had a soap tank installed at a cost of $10, and I boil it with a steam "line." In the nurses' dining room all butter left on plates is saved and brought to boiling point, then cooled and put in cold storage for cooking purposes. I have sufficient for use in both kitchens, and I never have to buy any cooking butter.

All meals are well cooked and served hot, and I provide as much variety as possible in a town so far away from good markets.

Some of the figures for 1915 are as follows:

| | |
|---|---|
| Cost of maintenance | $70,380.21 |
| Cost of maintenance per patient | 1.90 |
| Total cost of food | 24,797.18 |
| Daily food cost per capita | .34 |
| Daily average persons fed | 201 |
| Average number patients daily | 100 |

SUPERINTENDENT.

Offhand, and without knowing anything about the personal equations in your hospital, we should be tempted to say that you are a good superintendent; you certainly realize the essentials of good hospital management, and you are setting yourself out in your letter in a way to develop the fact that you know what you are talking about. Your hint that you are growing discouraged and want to quit means that you are tired and need a rest; no one can give good service when he is in the mental condition that you are just now. You feel that your board does not realize all that you are doing; you feel that your board isn't sat-

isfied, and that they are asking more of you than they have a right to expect in the way of economies.

Offhand, too, we should say that $1.90 as a per capita cost, under the conditions that you outline, is a very reasonable figure, and very few hospitals are giving the service that you say you are giving for that money; very few hospitals are making any of their service units pay for themselves. If your pathological work is being done without expense because of the income from it, you are exceptionally fortunate or you are an exceptionally good manager, or you have a medical staff that is giving you exceptionally good support.

Perhaps it would be better not to ask your board to take your figures for granted, but there must be some fair men on the board, men who have had sufficient experience in business affairs to know that they are incapable of judging of technical matters without the necessary technical training; these men, we should think, would at least accept your suggestion that they look into what other hospitals are doing and thereby judge of what their institution is doing.

There are no hospitals that are easy to administer, and there are no hospitals in which there are no difficult and perplexing problems; you have solved one of the most difficult of them in straightening things out in your training school. There can be no more perplexing problem than this, and hence you can probably expect to come across no more serious troubles than you have been able to master cleverly in the past. If your trustees have confidence in you, and if they like you and treat you well, it seems to us that you owe it to yourself and to them and to the hospital to sit down and have a plain talk with them, unburden your mind to them, and you have our assurance that they will meet you more than half way and help you solve your problems and try to make it easier for you, and not more difficult.

## Cost of Equipment

To the Editor of THE MODERN HOSPITAL:

We are preparing to build, and already some of the good people of our city have proposed to undertake the furnishing and equipment of various parts of the hospital, and we would like very much to have the idea of THE MODERN HOSPITAL as to figures of cost for furnishing—for instance, a sterilizing outfit, an operating room, the main kitchen. These are some of the units that have already attracted the attention of some of our people, and, if we could tell them just exactly what one of these units would cost to equip, we think we could get an occasional check that might otherwise escape. It is our intention to recognize such gifts by bronze plates on the door of the unit or in some other suitable place. Our new hospital will be about 100 beds. A SUPERINTENDENT.

We are delighted with your scheme for the equipment of your special service units. We could not well conceive a better plan to attract funds than by separating out the particular purpose for which you want a sum of money, and it is human nature that you may expect responses where you would probably not get them if the amounts were to be more or less lost in the maelstrom of a general endowment fund.

In the figures that we are about to give you we have been thinking of a 100-bed hospital in considering the sterilizing apparatus and the kitchen, which will do for the whole house and which will be quite adequate for your needs for a long time. The operating room stuff would be for one room, and you could multiply that by the number of rooms that you want to furnish. The private room furnishing can be done for $40 or $50, but it can be very nicely done for $100, and I am giving you the various items.

STERILIZERS

| | | |
|---|---|---|
| 1 | dressing sterilizer, 16x60 inches | $ 600.00 |
| 1 | water sterilizer (35 gallons each, hot and cold) | 375.00 |
| 2 | instrument sterilizers, 22x12x19 inches | 150.00 |
| 1 | utensil sterilizer, 20x20x24 inches | 132.50 |
| | | $1,257.50 |

There will be some discount off this, but not very much.

OPERATING ROOM FURNITURE FOR ONE ROOM

| | | |
|---|---|---|
| 1 | operating table | $175.00 |
| 1 | wall stand | 30.00 |
| 1 | curved table | 15.00 |
| 1 | two-drum stand | 20.00 |
| 1 | immersion stand | 7.50 |
| 2 | stools at $5 each | 10.00 |
| 1 | footstool | 5.00 |
| 1 | irrigation standard | 20.00 |
| 1 | gooseneck reflector | 9.00 |
| 2 | instrument and dressing tables at $20 each | 40.00 |
| 1 | anesthetic table | 10.00 |
| 1 | double basin stand | 6.00 |
| | | $347.50 |

This does not include any sinks or special plumbing, or lighting figures.

PRIVATE ROOM FURNITURE

| | | |
|---|---|---|
| 1 | dresser | $ 30.00 |
| 1 | bed | 30.00 |
| 1 | nurse's couch | 5.00 |
| 1 | bedside table | 6.00 |
| 1 | rocker | 9.00 |
| 1 | chair | 4.00 |
| 3 | rugs, 3x6 feet, at $4 each | 12.00 |
| 1 | curled hair mattress | 12.00 |
| | | $108.00 |

This does not include any nursing paraphernalia, such as head rests, pans, basins, commodes, etc.

EQUIPMENT FOR MAIN KITCHEN

| | | |
|---|---|---|
| 1 | range | $ 300.00 |
| 1 | steam table | 150.00 |
| 1 | dish warmer | 100.00 |
| 1 | motor and main shaft | 100.00 |
| 1 | potato peeler | 100.00 |
| 1 | meat and vegetable grinder and chopper | 125.00 |
| 1 | ice cream freezer, 20 quarts | 50.00 |
| 1 | stock boiler, double-jacketed, 40 gallons | 100.00 |
| 1 | vegetable steamer, 3 compartments | 150.00 |
| 1 | pan rack, 10-foot, at $3 a foot | 30.00 |
| 1 | cook's table | 40.00 |
| 1 | bread slicer | 20.00 |
| | | $1,265.00 |

Obviously there are a good many of these items that one can do without, and you will be the best judge of which ones, but we have given you a pretty complete list, so that you can take it up with anybody who would think well of the proposition to furnish your kitchen for you.

## The Meaning of Words

WEST SIDE GENERAL HOSPITAL,
ST. PAUL, MINN.

To the Editor of THE MODERN HOSPITAL:

Will you please give me your opinion as to what items belong to the administrative expenses and what to the operating or running expenses in our bookkeeping. I am inclosing one of our balance sheets.

REV. G. DUEBENDORF, Treasurer.

We cannot see any reason for separating your administrative and operating expenses. If dry goods is an administrative expense, why are not bakery products or the laundry? If your hospital publication, "The Life Line," is an administrative expense, why isn't printing and advertising? In other words, we can see no essential difference between the two terms—administration and operation. Is not administration of the hospital the same as the running of the hospital, and is not the running of the hospital the operation of the hospital?

It seems to us that your bookkeeping system would be somewhat simplified if you were to divide your accounts merely into two accounts—income and expenditure. Then you can distribute your income into its various sources, as, for instance, rental of rooms, amounts paid for the use of ambulance, any special items in the hospital contributions—that is, donations of all sorts. The expenditure

side could be distributed into the various classes—for instance, insurance for one class, any rentals that you might be paying, your pay roll, your fuel, your raw food, your medical and surgical supplies. And then you might subdivide some of these for your own better information, as, for instance, the food account might be divided up into, say, meat, including fish and poultry; vegetables, fruits, etc.; and then, if you want to go on, you can subclassify, as, for instance, fruits into fresh, raw, canned, etc.

All these subdivisions are not absolutely necessary, but they will prove of very great service to you for purposes of comparison at the end of each month and at the end of the year.

## OHIO HOSPITAL ASSOCIATION TO MEET

### Second Meeting of the New Association to Be Held in Cincinnati in May—Ambitious Program Provided and Serious Problems to Be Discussed

The program for the Cincinnati meeting of the Ohio Hospital Association, May 24-26, has been practically agreed on and is published below. Unfortunately some of the details are yet in abeyance, but in a general way the program as announced will be carried out.

Two very important subjects will occupy a large part of the time of the convention—namely, the operation of the State Registration Law and the Workmen's Compensation Act.

In regard to the former, the Ohio State Medical Board has recently ruled that it will not recognize any training school in a hospital which does not average more than fifteen patients per day. This will affect many of the smaller hospitals in the state, especially private hospitals, and there will undoubtedly be a keen discussion.

Some of the special hospital people have also announced that they proposed to bring up the problem, under this head, of training schools for special hospitals, such as hospitals for the insane and children's and maternity institutions.

Ohio is very much alive and the Ohio Hospital Association is most active, and undoubtedly there is a disposition in many quarters to go to the extent of settling this question of nursing in special hospitals—in just what way remains to be seen.

The Workmen's Compensation Act of Ohio has not given universal satisfaction, especially in regard to the time limit in the hospitals for patients sent there under the act. It is complained by some hospitals that the state board provided for under the act does not permit long enough residence in the hospital. The matter was threshed out pretty exhaustively at the Cedar Point initial meeting, when the Ohio Hospital Association was organized last summer, but it will come up again this year. It was claimed last summer that many cases require longer than $200 would pay for, the maximum rate for the care of a case under the act; some of the hospital people cited cases of fractured spines incidental to work in the coal mines. Other hospital administrators claimed last summer that the act itself was ambiguous in some points, and that, therefore, hospitals were not all being treated exactly alike.

No doubt the Cincinnati meeting will bring in representation from a great majority of the hospitals of Ohio, whose boards of trustees and administrators are fully alive to the possibilities of the association and the helpfulness it can be to the hospitals if its hospitals are properly concentrated.

HOWELL WRIGHT, Secretary.

PROGRAM.

WEDNESDAY, MAY 24.

*Morning.*

11:30. Registration.

*Afternoon.*

1:30. Convention called to order by the president. Reading of the minutes of the previous convention. Address of welcome by Mayor George Puchta. Response by the president and president's address. Three fifteen-minute papers. *Special Section Meeting—Superintendents of Tuberculosis Hospitals.* 1, paper by tuberculosis hospital superintendent. 2, The Hospital and the Operation of the Workmen's Compensation Act, W. S. Hoy, M. D. Discussion—Wallace D. Yaple, chairman of the State Industrial Commission of Ohio. 3, The Community's Obligation for the Care of Its Indigent Sick and Injured, Fred S. Bunn, superintendent Youngstown City Hospital. Discussion—Rev. C. H. LeBlond, director of Catholic Charities, Cleveland. Reports of committees. Announcements.

*Evening.*

8:00. Paper, S. S. Goldwater, M. D., superintendent Mount Sinai Hospital, New York city. Paper, John B. Murphy, M. D., Chicago. Discussion.

THURSDAY, MAY 25.

*Morning.*

9:30. Round table discussions (subjects to be announced later).
12:00. Buffet luncheon at Cincinnati General Hospital.

*Afternoon.*

2:00. Automobile ride around the city, affording opportunity to visit other Cincinnati hospitals and places of interest.

*Evening.*

6:30. Banquet. Speakers: Geo. W. Crile, M. D., chief surgeon Lakeside Hospital, Cleveland; C. R. Holmes, M. D., chairman Cincinnati Hospital Commission; John A. Hornsby, M. D., editor THE MODERN HOSPITAL.

FRIDAY, MAY 26.

*Morning.*

9:30. Reports of committees. Election of officers. Symposium—The State Registration of Nurses Law, The Operation of the State Registration of Nurses Law from the Point of View of the Small Hospital, J. S. Cherrington, M. D. The Operation of the State Registration of Nurses Law from the Point of View of the Large Hospital, Miss Laura R. Logan, superintendent of nurses, Cincinnati General Hospital. Discussion—Miss Johnson, examiner of nurses for the State Medical Board. Discussion—Representative of state hospitals, representative of the State Graduate Nurses' Association, representative of special hospitals. Adjournment.

Note—The papers on this program are not to exceed fifteen minutes unless otherwise indicated, and all discussions are to be limited to five minutes. No papers will be read by title.

### Reorganization of Hospitals Contemplated

Commissioner Kingsbury, of the Department of Charities of New York city, has under consideration, in a plan for the reorganization of city hospitals under his control, the substitution of a small salary medical staff, with a continuous service, for the present large medical staff with a rotating service.

According to a local newspaper, Dr. A. F. Young, the new superintendent of the Milwaukee Hospital for the Insane at Wauwatosa, Wis., has inaugurated a system compelling a rigid physical examination of all employees of the institution. Dr. Young is quoted as saying that, for the protection of patients, he feels that the same plan of physical examination being agitated for employees of hotels and restaurants should be in effect in hospitals.

The Hospital Saturday and Sunday Association, New York city, has changed its name to the United Hospital Fund of New York. Mr. Olyphant, its president, explains that, when the association started thirty-six years ago, its sole object was to promote the taking of a collection for hospitals in churches and synagogues in the city on the last Saturday and Sunday of the year—hence its name. Since then, however, the appeal has been widened, so that at present only one-fifth of the receipts are from religious bodies, while four-fifths are from individuals and firms which contribute through committees of active business men in about thirty trades and professions. Collections on Hospital Saturday and Sunday will continue, but it is felt that the new name, United Hospital Fund of New York, will be more intelligible to strangers, and more likely to enlist their support. The first year's collection was $26,455.07, that of last year $126,421.90, while the present year shown an increase of $6,885.61 above last year at this date, according to Charles Lanier, treasurer.

# HINTS FOR HOSPITAL SUPERINTENDENTS

This column is maintained as a help and reminder to hospital workers about the little things in administration. It is urgently requested that everyone contribute his and her "hints." Each item added to our knowledge helps to fill the common storehouse from which all may draw supplies.

### What Personal Effort Means

Successful personal efforts of hospital officials to interest the individual members of a district or community in contributing to the support of their local hospital service creates an atmosphere of wholesome, unselfish thought for others that makes each individual life a happier and better one, and the community a better place in which to live. When individuals feel no interest in or desire to help their suffering neighbors, life becomes less worth the living.

### All Should Work

No hospital board can sit still and do nothing in the presence of a financial emergency and hope to retain its self-respect. It is the duty of every member to contribute his best thought and effort. All board members are not of equal capacity, but each may do something, and every little helps. Honest purpose and persistent effort have saved the day for more than one hospital. There is no room in hospital work for drones; each should work, or get off the board and thus make room for one who can and will work.

### The Interchange of Experiences

A well-known hospital authority, now deceased, once said: "A hospital may possess an exceptionally able and economical superintendent, but no hospital will by any chance escape from the certainty that its methods and economies may be improved by comparison and interchange of experience with other hospitals." This statement was made several years ago, and it is just as true today as it was then. Many hospital officials are too self-contained; they imagine that they know just about all there is to be known regarding hospital management, and that they have nothing to gain or learn by seeking the experiences of others. The hospital field is a distinct loser in consequence of this.

### Buy From Responsible Firms

In the buying of hospital supplies, especially the consumable supplies, the superintendent or steward should possess a much wider range of knowledge than is usually understood. The hospital buyer must of a necessity pass on a great variety of goods, which in the commercial trades are passed on by a number of different experts. Among the jobbing houses there is a separate expert on butter, beef, eggs, tea, coffee, cereals, flour, dried fruits, cotton goods, woolen goods, etc., but the hospital buyer must, to be a competent buyer, be familiar with all of these. To a degree, at least, this is usually not possible, and therefore the buyer must trust to the honor of those from whom he buys. The advisability of buying from responsible firms is, therefore, apparent.

### Curtailing the Abuse of Hospital Privileges

The failure of a hospital to collect, from people able to pay, for services rendered is to be condemned, because it exerts a demoralizing influence on the recipients themselves, because it curtails to that extent the service which might otherwise be rendered to people in greater need, and because it tends to check benevolent gifts. Much may be accomplished in curtailing the abuse of hospital privileges by requiring all applicants for treatment at less than the regular rates to fill out a blank, giving full information as to residence, address, occupation, weekly income, monthly rent, number and ages of the members of the family, etc. The mere requirement of this information will deter many improper cases from asking for free treatment, and it will also enable an intelligent inspector to rapidly form a fairly just idea regarding the merits of each case. This plan, properly worked out and efficiently applied, will not fail to produce most gratifying results.

### Regarding Hospital Support

Outside of its earnings, the support a hospital will receive from the general public will depend on the public's knowledge and understanding of what the hospital is, why it needs support, and how much support it needs. This understanding and knowledge must come from the hospital itself, and it must be conveyed to the public through a channel and in such a manner as will bear the impress of intelligence and trustworthiness. Undoubtedly the local newspapers are the most neglected channels for cultivating increased hospital support, and that they are not more generally used for this purpose is the fault of hospital officials themselves. In too many instances this channel is practically closed because of the tactless manner in which hospital superintendents treat the requests of newspapers for information for publication. The press goes far in forming public opinion, and a hospital official cannot spend a few minutes to better advantage than in aiding a reporter or editor to obtain that clear and sympathetic knowledge regarding hospitals which will not only give a higher value to his writings, but will enable him to the better present hospital matters to the public, for in so doing the hospital official will directly benefit hospital interests.

### Notes

It is the duty of the hospital board to formulate and keep amended up to date definite rules for the government of each officer and employee, professional or otherwise. It is only in this way that all may work together, each clearly understanding his or her individual duty, and united in a purpose to advance the standards of the hospital they serve.

* * *

The question is asked: In asking financial support, and even in admitting their patients, do not hospitals tacitly guarantee to do everything possible to effect a cure? If, then, the medico-social clinic and the social service workers are positively needed to that end, is it not the hospital's plain duty to establish and properly maintain such a department just as much as it should its drug room, its nurses, or its x-ray room?

DEL T. SUTTON.

# THE MODERN HOSPITAL

*A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services*

Vol. VI *May, 1916* No. 5


## NEW YORK ORTHOPEDIC HOSPITAL HAS NEW HOME

### Renaissance Style of Architecture Selected to Meet Exacting Conditions of Restricted Space—Color Schemes Worthy of Special Note—Green Operating Rooms—Walls Divided by Dadoes and Friezes—Some of the Details

By L. M. FRANKLIN, of York & Sawyer, Architects, New York

THE work of this charitable institution consists in the treatment of crippled children and adults, administered in the dispensary, in the hospital, in the home by the visiting nurses, or at the country branch for convalescents at White Plains.

The special conditions which the architects had to study in designing a building to house this institution, and which proved to be the controlling factors in determining the plan, may be stated briefly as follows:

1. The site is in the middle of the block. It has a frontage of about 88 feet on Fifty-ninth street and 127 feet on Fifty-eighth street, the level of Fifty-eighth street being four steps higher than Fifty-ninth street.

2. A single entrance was required for all employees, patients, and visitors.

3. Numerous small rooms were necessary, and, to light these, a building with a long perimeter.

4. A very large dispensary, well lighted, with good natural ventilation, had to be arranged conveniently for the surgeon to attend to his four classes of patients; new, continued, male or female.

5. Ten-bed ward units were determined on; at least three units to be placed on a floor.

With these fixed conditions, the problem was to plan a hospital which should have not only light wards and a well-arranged dispensary, but an enormous basement, covering 80 percent of the lot, in which practically every room should have good natural light and ventilation. After thorough study and preparation of numerous schemes, the cruciform plan was selected, as it proved by comparison to be the best solution of the problem, fulfilling all the requirements.

By referring to the floor plans it will be seen that the first, second, and third floors cover less area than the floor below, and that there are no inclosed courts above the basement. Planned in this way, it is possible to provide additional overhead lighting for the more important rooms in the lower stories, and even in the basement, the kitchen, laundry, and servants' dining rooms, and most of the bed rooms have direct sunlight for a good part of the day.

The building is of the most modern type of fireproof construction. The exterior walls are self-supporting, the structural steel carrying only the floor loads. The floor construction is of reinforced cinder concrete and the partitions of hollow terra cotta. The horizontal pipe lines are run below the floor construction and the ceilings hung below these lines. Access doors, flush with the plaster, are provided wherever there are valves or clean-outs.

The two main staircases, located respectively in the north and south parts of the building, are entirely inclosed and separated from the corridors by fireproof doors. The elevators, directly across the corridor from the staircases, are equipped with self-closing doors and a check to prevent the doors striking when they close, thus avoiding noise. A fire escape stairway leads down from the main roof into the northeast court.

The interior finish throughout is as simple and inexpensive as is consistent with good hospital construction. There are painted cement floors in the subbasement and basement, and in the bed rooms for the staff, nurses, and servants. The kitchen department, however, the laundry, most of the rooms in connection with the dispensary, the operating suite, dressing rooms, pantries, and

the toilets and baths have tiled floors. A special colored battleship linoleum is used in the offices, gymnasium, wards, quiet rooms, and in the ward corridors, with a terrazzo sanitary base and a floor border flush with the linoleum. At the junction of the linoleum and terrazzo (which are flush) there is a built-in brass strip, which not only serves as a guide for running the terrazzo, but also protects its edge until the linoleum is laid.

Tile wainscots set flush with the plaster are used in the kitchen, pantries, operating rooms, dressing rooms, plaster rooms, and in the toilet and bath rooms. The interior doors throughout have steel-framed trim flush with the plaster, thus avoiding the use of wood. In the corridors, wards, and certain other rooms there is a painted dado about 4 feet high, so that the lower portion of the walls, when defaced or finger-marked, may be repainted without touching the upper portion.

The individual floors are used as follows:

Fig. 1. New York Orthopedic Dispensary and Hospital. Side view. Front view is shown on the front cover of this issue.

### SUBBASEMENT

The plant for supplying heat, power, light, ventilation, and refrigeration, and the suction and hot water tanks, filters, and pumps are in the subbasement at the south end of the lot. The heating is by direct radiation. The ventilation, reduced to a minimum, is divided into five separate units—namely, a fresh air supply and exhaust system for the subbasement; an exhaust for the brace shop department, x-ray rooms, gymnasium, and waiting room; an exhaust for the laundry, kitchen, and pantries; an exhaust for the toilets, baths, and maids' closets; a fresh air supply and exhaust system for the operating suite. This division of the ventilation into small units is economical, as the independent fans are operated only when the rooms which they ventilate are in use. In general, natural ventilation is relied on rather than artificial.

### BASEMENT

All supplies, except those for the brace shop, are delivered at the service entrance on Fifty-ninth street, and dropped to the receiving room in the basement on an electric lift. When unpacked and checked, they are taken to the adjoining store rooms.

Directly across the corridor from the receiving room is the entrance to the kitchen department. Here are store rooms for groceries, canned goods, etc., a cooled vegetable room, three large refrigerators, and an ice cream room, with a stock ice box, power ice crusher, and power freezer. The kitchen, lighted on the south and overhead, is completely equipped with modern cooking apparatus. The automatic power dumbwaiters, serving the pantries, open directly from the kitchen. The servants' dining rooms are on the opposite side of the main corridor.

The laundry, lighted on two opposite sides, is equipped with individual motor-driven apparatus. Directly across the corridor are rooms for soiled linen, general linen storage, and assorting and marking.

The brace shop, with its auxiliary rooms for polishing and grinding, forge work, sewing, and leather work, store rooms and office, is on the Fifty-eighth street side of the lot. There is a separate entrance from the street for supplies for this department. The shop has windows on three sides, the polishing and grinding room has overhead light and windows on opposite sides, opening on areas, while the leather and sewing rooms have north light. All machines are individual motor-driven.

In the basement there are also bed rooms for the male help, a room where plaster jackets are made, a sterilizer large enough to take mattresses, a carpenter shop, store rooms, and toilet and locker rooms for the female day help and other employees. The engineer's and foremen's toilet is also on this floor instead of in the subbasement on account of the high level of the sewer.

### FIRST FLOOR

The entrance on Fifty-ninth street is the only

one on this floor, the door on Fifty-eighth street serving only as a fire exit. Opening directly from the entrance lobby is the office, reception room, consultation room, and telephone booth, with the various offices, locker and toilet rooms, and the board room in close proximity. Doctors, nurses, and visitors going to the wards or operating suite take the first elevator without passing through the dispensary.

The waiting room opposite the entrance is planned so that everyone entering or leaving the dispensary passes in front of the registrar's desk. Opening from this room are two toilets, and back of the registrar are the history library and the head visiting nurse's office. Adjacent is a room where plaster casts are taken and prepared for the brace shop, a room where the patient's history is recorded, and two toilets.

The main dispensary room, separated by a short corridor from the waiting room, is two stories in height and lighted by ten large circular-headed windows. It is designed with a vaulted ceiling, has a buff quarry-tile floor with a black terrazzo base and border, and the walls show a high painted wainscot. The clerk's desk is in the center of the room, with a stairway to the basement directly behind it. The screens, of reinforced Keene cement, supported on brass legs, divide the room into several departments for examination and treatment.

The dispensary operating room, the scoliosis department, with a large gymnasium, dressing rooms, office, and plaster room, and the x-ray department, are in the south wing. The x-ray is planned with the coil room between two operating rooms, each furnished with small dressing rooms. Across the corridor are the dark room, library for developed plates, and the view room. The operating rooms, dark room, and view room have light-tight sliding shutters at the windows, with a light-tight ventilator below the sill.

SECOND FLOOR

The living quarters for the superintendent and interns are on this floor in the Fifty-ninth street wing. The contagious wards are between this wing and the upper part of the dispensary, and are isolated from the rest of the building. This is a complete unit, with two wards opening on flat roofs, toilet, diet pantry, and a nurses' room with bath. This department is entered through a vestibule, where the doctor may wash and change his gown. The maids' quarters are in the Fifty-eighth street wing on this floor.

THIRD FLOOR

The entire third floor is devoted to living quarters for the supervisor of nurses, housekeeper, and the nurses. The five bed rooms in the west wing are shut off by a corridor door and occupied by the night nurses. On this floor there is also a dining room with its pantry, a sitting room with casement sash opening on a balcony, a reception room, a sewing room, and a kitchenette.

FOURTH, FIFTH, AND SIXTH FLOORS

These are the ward floors, with three 10-bed wards on each floor, controlled by the charge nurse, who has her desk in the central hall. Each unit is separated from the main corridor by double doors, and consists of a ward, lighted on three sides, a dressing room, and a toilet and bath room. The loggias open directly from the central wards and from the main corridor. On each of these floors there are also two quiet rooms, a diet pantry served directly from the kitchen by two power dumbwaiters, an alcove off the main corridor, with a lavatory for the doctors, a nurses' toilet, and closets for ward accessories, patients' clothes, linen, etc. On the fourth floor there is an office for the supervisor of nurses, and an admitting room where patients are examined and bathed before being placed in the wards.

Fig. 2. New York Orthopedic Dispensary and Hospital. One of the wards.

The operating suite at the north end of the first ward floor is planned with the main operating room in the center, with the anesthesia, plaster,

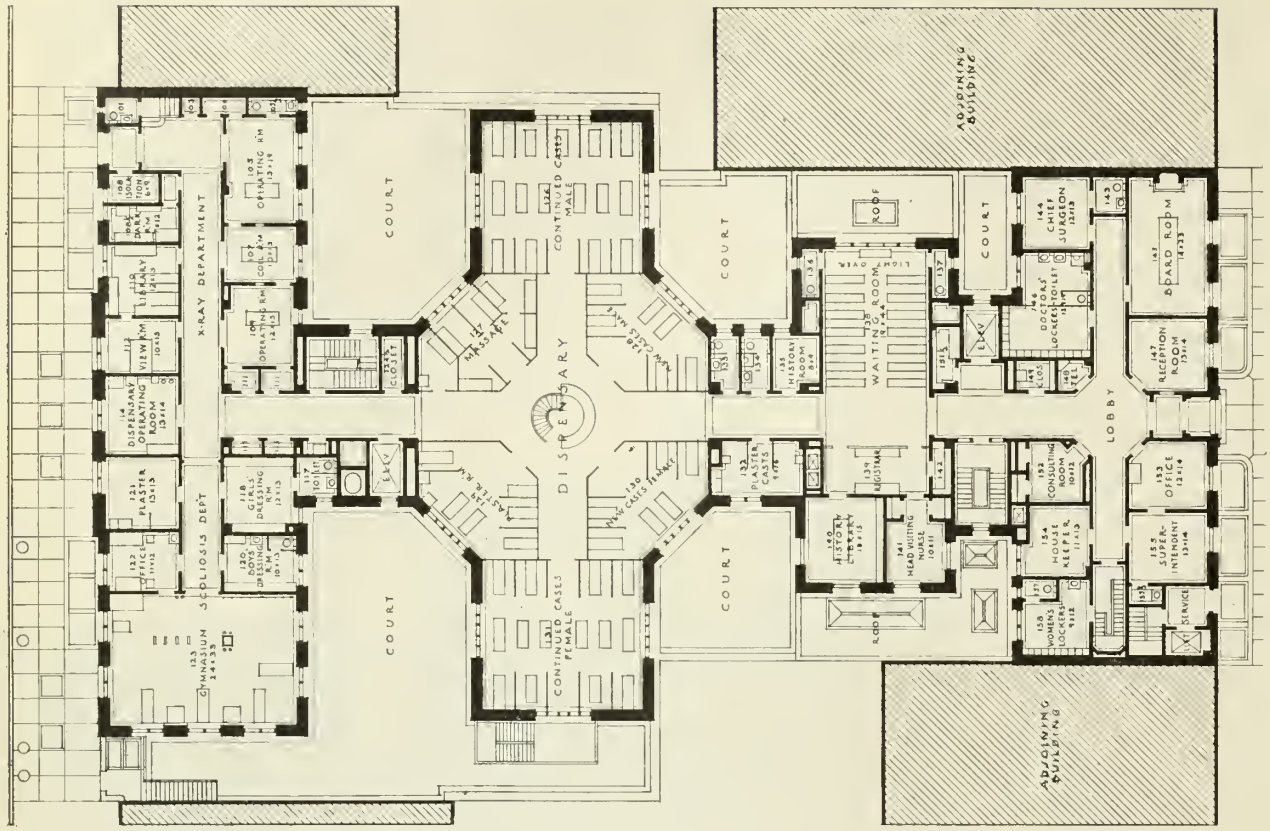


Fig. 4. New York Orthopedic Dispensary and Hospital. First floor plan.

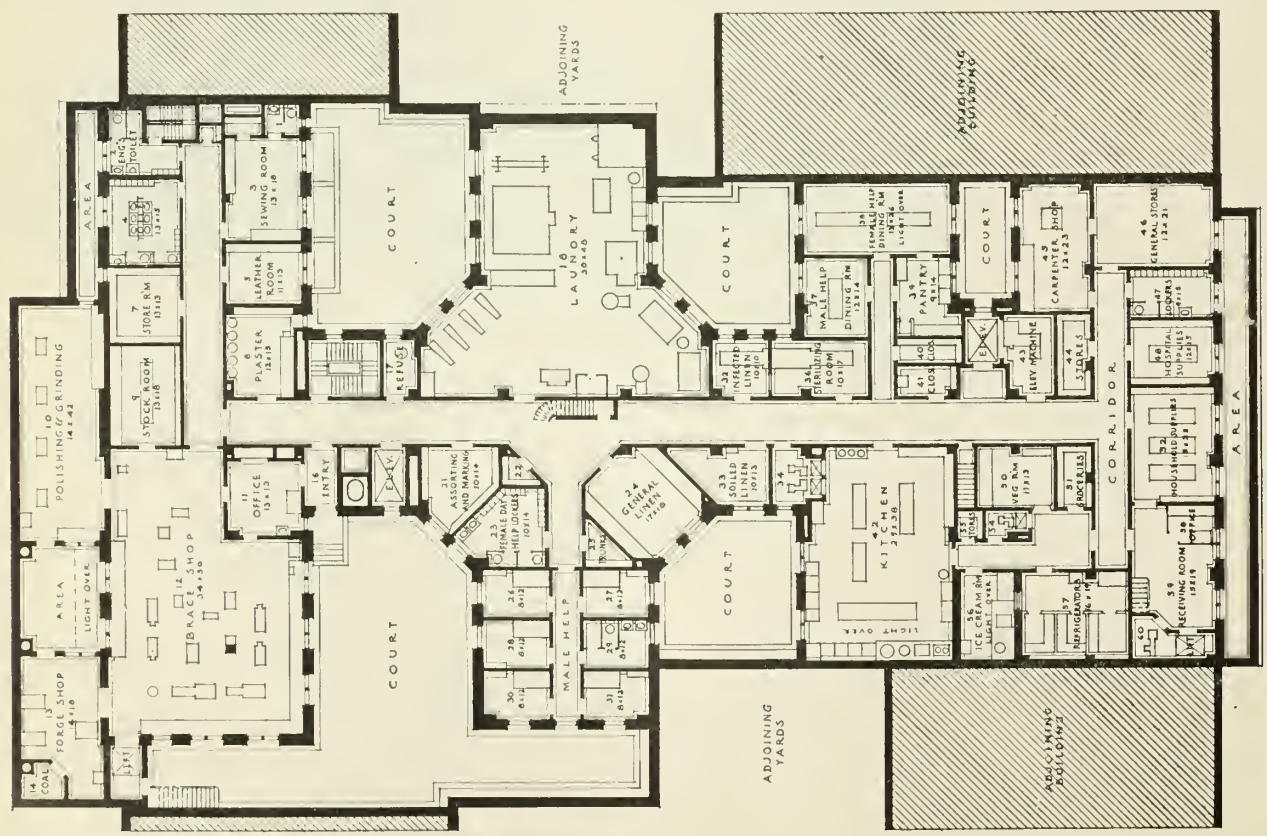


Fig. 3. New York Orthopedic Dispensary and Hospital. Basement floor plan.

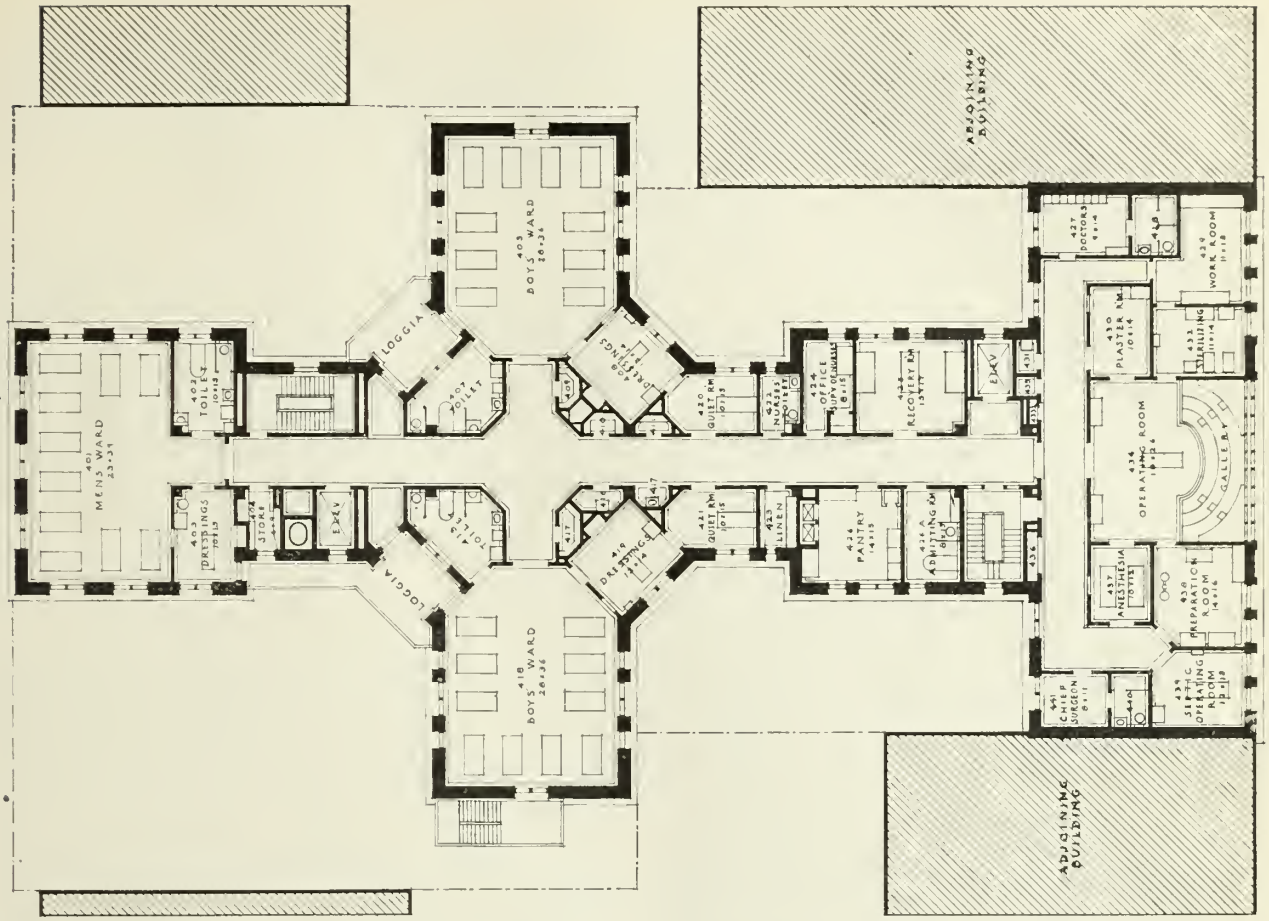


Fig. 6. New York Orthopedic Dispensary and Hospital. Fourth floor plan.

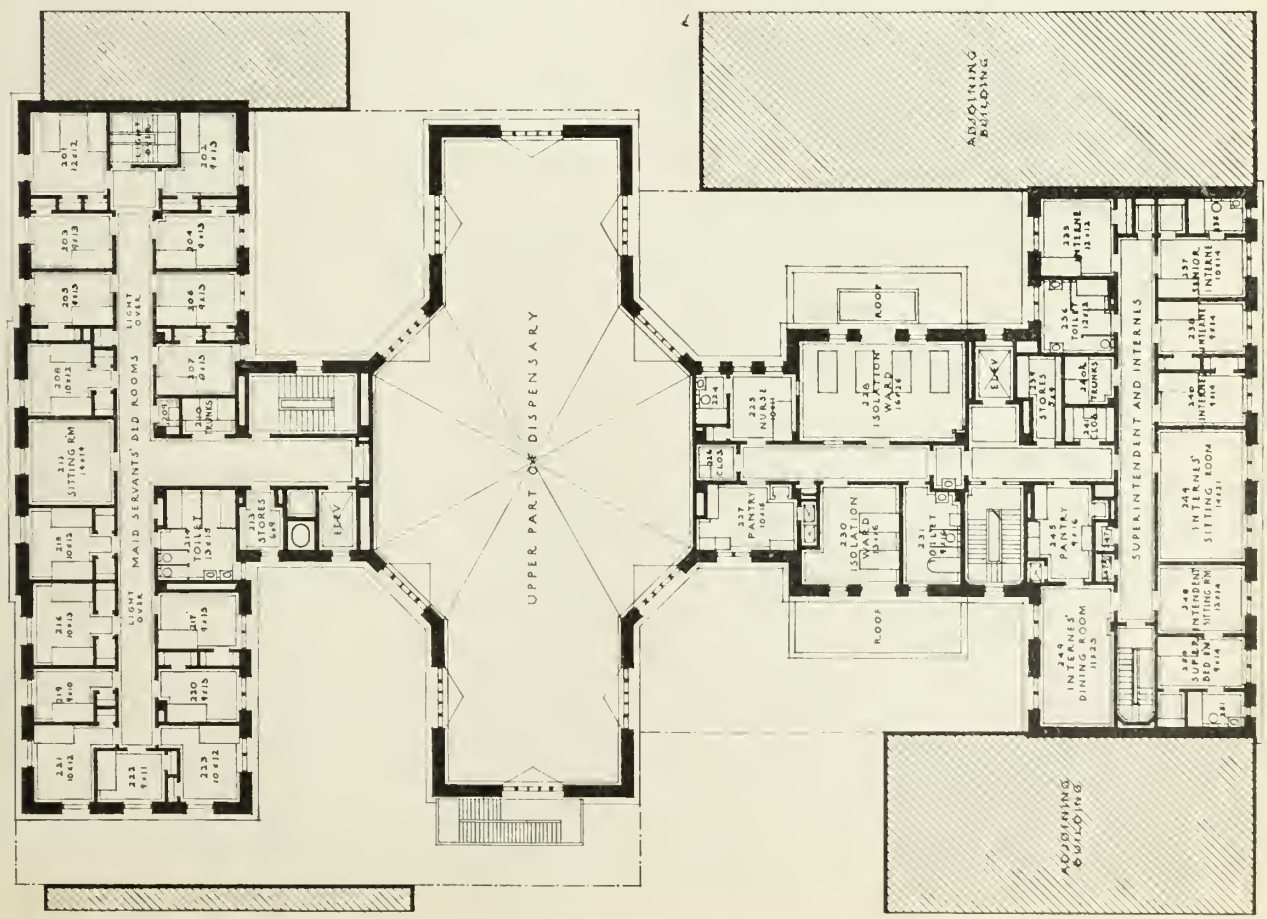
ADJOINING BUILDING
UPPER PART OF DISPENSARY
MAID SERVANTS' BED ROOMS
LIGHT OVER
201 12'-0" x 12'-0"
202 9'-0" x 9'-0"
203 9'-0" x 9'-0"
204 9'-0" x 9'-0"
205 9'-0" x 9'-0"
206 10'-0" x 12'-0"
207 9'-0" x 9'-0"
208 TRUNKS
211 SITTING RM 14'-0" x 13'-0"
213 STORES 10'-0" x 13'-0"
EXAM
215 10'-0" x 13'-0"
TOILET 13'-0" x 13'-0"
216 10'-0" x 13'-0"
217 9'-0" x 9'-0"
219 9'-0" x 10'-0"
220 9'-0" x 9'-0"
221 10'-0" x 12'-0"
223 10'-0" x 12'-0"
223 9'-0" x 11'-0"
226 ISOLATION WARD 16'-0" x 26'-0"
ROOF
EXAM
227 STORES 5'-0" x 13'-0"
228 CLOTHES TRUNKS
233 NURSES' 10'-0" x 13'-0"
234 TOILET 12'-0" x 13'-0"
235 INTERNE 12'-0" x 13'-0"
237 PANTRY 10'-0" x 13'-0"
230 ISOLATION WARD 10'-0" x 13'-0"
231 LIGHT
245 PANTRY 9'-0" x 13'-0"
SUPERINTENDENT AND INTERNES
236 JUNIOR INTERNE 10'-0" x 13'-0"
238 INTERNE 9'-0" x 13'-0"
240 INTERNES' SITTING ROOM 14'-0" x 13'-0"
248 INTERNES' DINING ROOM 11'-0" x 23'-0"
ROOF
249 SUPERINTENDENT SITTING RM 13'-0" x 13'-0"
250 SUPERINTENDENT BED RM 9'-0" x 13'-0"
241
ADJOINING BUILDING

Fig. 5. New York Orthopedic Dispensary and Hospital. Second floor plan.

preparation, and sterilizing room opening from it. The small septic operating room adjoins the preparation room, and is conveniently near the room for anesthesia. The work room for the preparation of bandages, pads, etc., is to the west of the sterilizing room. There is also a doctors' locker room, with toilet and bath, and an office for the chief surgeon. The recovery room is just outside the suite.

The main operating room is arranged with an amphitheater seating forty-six. This is reached by the students and visiting doctors by an inclined passage from the floor above, thus obviating the inconvenience of having visitors in the operating suite. The seats in the gallery are supported on brackets and made of cast-iron modeled in the form of a bicycle saddle. This type is not only sanitary, but takes so little space from the passageways as to enable the observers to be placed much closer to the operation than is usual. The room is lighted by north window and skylight constructed of steel and glass, and provided with condensation gutters. Inside the window is a glass screen in a steel frame. As hot air is introduced between the sash and this screen, there is no down draft, even in the coldest weather. The floor and wainscot in both operating rooms are of dark-green tile, while the upper walls are of plaster painted a light color. With this dark wainscot and floor, the surgeon, looking up from the patient, does not encounter a glare of light and find his eyes useless for a moment when he returns to his work, as is the case with white floor and walls. The ventilating apparatus for this department is in the attic space directly above the operating suite.

The drug room and laboratory are on the fifth floor. The latter is equipped for doing all the necessary pathological, bacteriological, biological, and chemical work of the hospital. On the sixth floor is an autopsy room and an isolation room, with its bath and toilet room.

### SEVENTH FLOOR

Only the central portion of the building is carried up above the seventh floor, leaving a large area of flat roof for outdoor treatment and recreation. The loggia gives ample protection in stormy weather. On this floor is a rest room for nurses, two toilets, a mattress room, and a tank room in connection with the refrigerating apparatus. A stairway leads to the attic space above. Here is the house tank, two of the exhaust ventilating fans which discharge the foul air through the cupola, and considerable storage space.

### EXTERIOR

The exterior is designed in the renaissance style of northern Italy. The wall surfaces are of stucco, and the cornices, trim, coping, and sills of a special red terra cotta. The sloping roofs are covered with tile the same color as the terra cotta. The windows on the ward floors have transoms hinged at the bottom to swing in.

### CAPACITY

There are nine wards planned for 10 beds each, or a total of ninety ward beds. Six quiet rooms, a 2-bed isolation room, and 6 beds in the isolation department make a total of 104 patients' beds. There are twenty-eight single rooms for nurses, three suites for the superintendent, supervisor of nurses, and housekeeper, four rooms for interns, accommodation for twenty maids and five male help, giving a total bed capacity of 164.

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### Fine Flour Bread an Imperfect Diet

Man is the only animal that spoils his food before he eats it. There seems to be a general awakening throughout the civilized world as to the importance of preserving the natural properties of foodstuffs. The history of dietetics illustrates in a really tragic way the truth of the old adage, "a little knowledge is a dangerous thing."

When the chemists discovered starch, fats, and protein, and recognized these substances, together with salt, as the primary and essential food principles, the impression soon prevailed that we were now thoroughly informed on the subject of diet—at least respecting food composition. But recent scientific investigations have developed a world of new, important, and interesting facts in relation to food which were never dreamed of by the chemists of the last generation. For example, it has been discovered that proteins differ widely in their composition, that every plant produces its own peculiar protein, and even the different tissues of an animal differ widely in composition.

Fats differ as widely, and this difference is not destroyed by the process of digestion, for animal fats enter the body and are deposited in the tissues in practically the same form in which they are eaten. For example, if a dog or a man is fed on beef fat or tallow, his own fat becomes tallow that is identical in composition with the original beef fat. In like manner lard, the peculiar fat of fishes, and other fats are transported into the tissues and deposited in their native form.

The discovery of vitamines is one of the most startling of modern revelations in relation to dietetics. Vitamines are found in all natural foodstuffs. They are essential to the welfare of the body because they serve as activators—subtle substances found in the body, through which the building of the tissues and various other bodily processes are carried on. Without these "activators," normal tissue building fails. The terrible results of this failure are seen in beriberi, scurvy, and pellagra, in which the patient's tissues perish while he is still alive, even though he is supplied with an abundance of food—the essential vitamines are lacking. Vitamines of the highest value are found in the bran or protective covering of rice, wheat, and other cereals. When this bran is removed, as in the polishing of rice or the bolting of wheat, the portion of grain which remains is lacking in vitamines. If a person subsists exclusively, or even very largely, on such a food, the result will be some serious nutritive disorders.—Good Health.

# IS MECHANICAL VENTILATION IN HOSPITALS A SUCCESS?

## Wards and Patients' Rooms Should Have Window Access to Good Air—Toilets and Service Rooms Should Be Connected to Exhaust Fan System—Forced Intake of Fresh Air Neither Necessary Nor Efficient—Most Plants Are Shut Down

By FRANK SUTTON, E. E., Consulting Engineer, New York.

IS mechanical ventilation for hospital wards essential for the welfare of patients? The writer has come to the conclusion that in the majority of cases forced ventilation may be eliminated from the average hospital ward.

The object of this article is to place before those interested in hospital construction an outline of general hospital practice as far as the ventilating equipment is concerned, based on a number of years' experience in the design of this part of hospital equipment, and an effort will be made to show the changes in this practice which have taken place in the past fifteen or twenty years. I have tried to eliminate technical terms, and the article will be confined to generalities, so that a person not familiar with the technical side of engineering may be able to intelligently understand the general line of work which is being done in hospitals at the present time.

Owing to the unusual conditions under which a hospital is operated, and the enormous expense incident to the care of patients, it is impossible to make a sufficient charge to cover the operating expenses. The hospital is, therefore, obliged to increase its source of revenue, either from endowment funds or subscriptions, or from entertainments and other sources. It can be readily seen that in the design of a hospital it is most essential, not only to be economical in the first cost, but also to design the plant in such a manner that the operating expenses are reduced to a minimum. The question, therefore, sifts itself down to what part of the equipment which is not absolutely essential to the welfare of the same may be eliminated.

When hospitals were first designed, there was no such thing as mechanical ventilation, and therefore it was necessary, in case more fresh air was required in wards, to open the windows. After this period the ventilating fan was developed, and it was deemed advisable to install what are known as forced systems of ventilation. This was found particularly advisable for auditoriums, schools, churches, and other buildings where large masses of people congregated, and where it was essential to introduce air by mechanical means, due to the fact that in a large number of cases it was impossible to get sufficient window area to introduce air directly from out of doors. This was not exactly the case in hospital wards, as the number of patients occupying a ward is limited to the number of beds that can conveniently be placed in a ward, and, further, to the cubic contents, but a large number of architects, engineers, and others interested in the construction of hospitals were of the opinion that it was essential for the welfare of the patients that all windows be closed, and that sufficient air could be forced into the wards to amply take care of all requirements. Of late years this practice seems to be on the wane in connection with hospital wards, which the writer believes is due to two principal reasons:

First, that the modern practice of treating the average patient is to produce a condition in the ward which is as near outdoor conditions as possible. This can be done only by opening all the windows possible and practically having an outside condition in the ward, which cannot be obtained by mechanical ventilation, because the building cannot be constructed with sufficient duct space to produce these results, except through large first cost.

Second, that the first cost of a system of mechanical ventilation is very expensive, and it is also expensive to keep such a system in operation, for the reason that it is essential to have a large amount of heating surface in connection with the fans, and also because all moving machinery naturally requires considerable power to run it. It is, therefore, a constant source of expense to the hospital management to keep this machinery in operation.

In the foregoing statements it is not the intention to convey the impression that systems of mechanical ventilation are of no value whatsoever, as in a large number of instances it is highly advisable to install fans in buildings, and even where the system of forced ventilation is eliminated from the wards it is most essential to install them in other portions of the building. In a very congested district of a large city, for instance, where a hospital is located in such district, and where there is apt to be a large amount of floating matter in the air—such as dirt and dust from neighboring manufacturing establishments, or the like—it would probably be advisable to put in a forced ventilation system for the wards, in which case the air should be passed through air washers in order to eliminate as much of the suspended matter as possible from the air. Even in

cases like these, however, on some days it would probably be found that the mechanical system could be shut down and the open windows used—perhaps the direction of the wind might have something to do with the clearer and cleaner atmosphere.

As has been stated, there are certain parts of a hospital which should be connected with mechanical fans for the removal of foul and vitiated air, but the introduction of fresh air into these places is not necessary, as the air can be drawn through the rooms by open windows or through other parts of the building. These rooms consist chiefly of toilet rooms, diet kitchens, slop sink rooms, the main kitchen, butcher shop, laundries, and other parts of the building where the air has a perceptible odor, or where it is necessary to carry off smoke, steam, or other vapors.

A number of cases have come to the writer's personal knowledge where elaborate ventilating systems were installed, but at the present time are shut down. Some years ago the writer designed a ventilating system for Fordham Hospital, located in the city of New York, where a system of fresh air fans was installed in the basement and the ventilating fans installed in penthouses on the roof. The exhaust system was separated—that is, the wards were placed on one system of fans, and the toilet rooms, kitchens, and other rooms were placed on another system of fans. After the building had been in operation for some time, the entire system was placed out of commission, with the exception of the fans operating the toilet rooms and the like, which I understand are still in use.

Another hospital with which the writer was connected is the new Greenpoint Hospital, just recently finished in Brooklyn, New York, where a compromise system was decided on—namely, the introduction of fresh air was eliminated from the wards, with the exception of indirect radiators, where wall boxes were installed through the walls and a certain amount of fresh air was allowed to come into the rooms through the radiators. A system of exhaust ducts was introduced, terminating in an aspirating coil located in the attic space of the roof. As this hospital has been in operation only a short period, it is problematical as to what disposition will be made of the ventilating system, such as it is, but it will probably be left in its present condition because it costs very little to operate.

Another case with which the writer is at present connected is the addition to the Jersey City General Hospital, where the present hospital building is to be duplicated. The present building is equipped with a complete system of forced ventilation, but I understand from the hospital authorities that the fans have been shut down for a number of years, and in the design of the new hospital building, which is somewhat larger than the present one, all mechanical ventilation for wards is to be entirely eliminated, and the only ventilation provided will be for toilets and other rooms of this character, which rooms will be placed on the exhaust fan system.

Still another case is the system installed in the new Union Benevolent Association Hospital, at Grand Rapids, Mich., which building is probably one of the most completely equipped of its kind that has been erected, but where mechanical ventilation has been eliminated from all rooms, with the exception of toilets, etc., which are on an exhaust fan system.

There is another class of buildings similar, in a way, to a general hospital—namely, those for insane patients. Some years ago the writer was connected with a large insane asylum in New Jersey, where an elaborate system of ventilation was provided for each building, which included the fresh air supply for the dormitories, wards, sitting rooms, dining rooms, and other portions of the buildings. As this institution consisted of a group of seven or eight very large buildings, it was necessary to install fans for each individual building. From the reports which the writer has received it is believed that these fans are not being used at present, although in the writer's opinion a system of ventilation in a building of this character is really of more importance than in a hospital building for the reason that the patients are not physically sick, and are, therefore, not confined to bed, and it would be a serious matter, in order to obtain fresh air for rooms, which certainly need fresh air, to have the windows open and the patients exposed to cold drafts.

In recent years the state of New York, in erecting some of the groups of buildings for insane patients, have apparently deemed it inadvisable to provide for any ventilation for wards, dormitories, or rooms of this character, but have constructed the buildings on very spacious lines—that is, the rooms are very large and have high ceilings. Probably the best illustration of this is some of the new buildings recently constructed at the Central Islip State Asylum for the Insane at Central Islip, Long Island, which are probably among the finest buildings that have been constructed for this class of institution, and the hospital authorities in this case apparently have not seen fit to provide for any ventilation whatsoever, with the exception of the parts of the building devoted to kitchen purposes, which are ventilated through a skylight in the center of the kitchen.

Those interested in hospital construction may, therefore, draw their own conclusions as to the tendency to eliminate ventilation from buildings of this character, but, as the writer has explained, this can be carried to the other extreme, and a happy medium should be sought in the design of ventilating systems for such buildings. It is very evident that it is next to impossible, by so-called window ventilation, to properly keep the air in good condition in toilets and similar service rooms without an exhaust fan, which must be kept running constantly in order to clear the room of foul and vitiated air as rapidly as possible; but, as for the mechanical introduction of air in hospital wards, the medical and hospital fraternities have apparently ruled that this is not necessary, which conclusion has, I presume, been reached from a series of experiments, and the writer has come to the conclusion that the medical fraternity probably knows, or at least should know, more about this branch of the business than the mechanical engineer.

## ORANGE MEMORIAL HOSPITAL—ANALYSIS OF STATISTICAL DATA

### Figures Concerned in the Annual Report Develop Usefulness of the Institution to Its Community—Method of Compilation Intended to Render Future Comparisons More Valuable

By DR. FREDERICK L. HOFFMAN, Statistician Prudential Life Insurance Company of America.

THE most useful and conclusive method of presenting the annual results of hospital experience is on the basis of the total discharges—that is, completed hospital cases. An analysis by cases treated varies but slightly in the aggregate results, but especially in the case of chronic diseases the inclusion of uncompleted cases or of patients still under treatment at the end of the year may lead to serious statistical errors. The Memorial Hospital, therefore, will hereafter present the results of its annual experience in detail only on the basis of discharged or completed cases.

The total number of patients discharged during 1915 was 2,252.[1] Of this number 1,996, or 88.6 percent, were white patients and 256, or 11.4 percent, were colored patients. On account of the fact that the disease distribution and fatality rates vary quite considerably for the two races, it has seemed advisable to present the facts separately for the white and colored. The same conclusion applies to the separate presentation of the data for males and females. Of the 1,996 white patients, 928, or 46.5 percent, were males and 1,056, or 52.9 percent, were females. (Sex not stated in 12 cases, 0.6 percent.) Of the 256 colored patients, 100, or 39.1 percent, were males and 156, or 60.9 percent, were females.

The table herewith presents the general results for white patients, according to sex and three divisional periods of life.

It is shown by this table that of the white male patients, 57.3 percent were discharged as cured or recovered, against 72.5 percent for white female patients. The proportion reported as improved, however, was 30.5 percent, against 18.1 percent for females. The proportion reported as unimproved was practically the same for both sexes.

[1] 7 stillbirths and 7 "boarders" not included.

The fatality rate was 7.4 percent for males, against 4.4 percent for females. As shown by the appended tables in detail, the higher fatality rate among males is largely attributable to the higher proportion of accidents. The preceding summary table for the white patients emphasizes the importance of a thorough analysis of the data, since a material variation in the fundamental factors—such as the race, sex, and age distribution of the patients—may result in percentages more or less untrustworthy.

DISCHARGES DURING 1915—CONDITION ON DISCHARGE BY SEX AND AVERAGE DURATION OF TREATMENT

Total discharges—white patients—all services.

| Condition on discharge | Males and females | Males | | | Females | | |
|---|---|---|---|---|---|---|---|
| | | No. | Percent | Average days treated | No. | Percent | Average days treated |
| Cured | 1,308 | 532 | 57.3 | 15 | 766 | 72.5 | 14 |
| Improved | 475 | 283 | 30.5 | 15 | 191 | 18.1 | 19 |
| Unimproved | 88 | 40 | 4.3 | 11 | 48 | 4.5 | 11 |
| Died | 116 | 69 | 7.4 | 14 | 46 | 4.4 | 20 |
| Result not stated | 9 | 4 | 0.5 | 7 | 5 | 0.5 | 5 |
| Total discharged | 1,996 | 928 | 100.0 | 15 | 1,056 | 100.0 | 15 |
| Total boarders | ..... | ... | ..... | .. | ..... | ..... | .. |
| Not treated | 7 | ... | ..... | .. | 7 | ..... | .. |
| Stillbirths | 6 | 5 | ..... | .. | 1 | ..... | .. |

RESULTS BY DIVISIONAL PERIODS OF LIFE

| Condition on discharge | Ages under 15 years. | | | 15 to 44 years | | 45 years | | Not stated | |
|---|---|---|---|---|---|---|---|---|---|
| | Sex unknown | Male | Female | Male | Female | Male | Female | Male | Female |
| Cured | 10 | 274 | 215 | 197 | 482 | 60 | 61 | 1 | 8 |
| Improved | 1 | 62 | 22 | 136 | 104 | 83 | 60 | 2 | 5 |
| Unimproved | .. | 9 | 7 | 20 | 21 | 11 | 18 | .. | 2 |
| Died | 1 | 26 | 13 | 18 | 18 | 24 | 14 | 1 | 1 |
| Result not stated | .. | 1 | ... | 2 | 4 | 1 | 1 | .. | .. |
| Total discharged | 12 | 372 | 257 | 373 | 629 | 179 | 154 | 4 | 16 |
| Average duration of treatment, days | 15 | 13 | 11 | 14 | 15 | 19 | 25 | 17 | 15 |

Among the colored patients the proportion discharged as cured or recovered was 53 percent for males, against 57.3 percent for white males, and 64.1 percent for females, against 72.5 percent for

white females. The proportion discharged as improved was 34 percent for colored males and 21.1 percent for colored females. The proportion discharged as unimproved was practically the same for both sexes, or 6.0 for males and 5.8 for females. The corresponding percentages for white patients were 4.3 for males and 4.5 for females. It is shown, therefore, that the proportion discharged as cured or recovered was lower for the colored for both sexes, while the proportion discharged as unimproved was distinctly higher for the colored, and also for both sexes. The fatality rate was 7.0 percent for colored males, against 7.4 percent for white males, and 9.0 percent for colored females, against only 4.4 percent for white females. The numbers under consideration for the colored are rather small for a safe generalization, and it has not seemed necessary to present the facts in summary tabular form. It would appear, however, that for the negro patients, treated under identical conditions, the institutional results were less satisfactory, attributable, of course, to a lower racial degree of vital resistance and a higher general mortality, as conclusively disclosed by all available comparative vital statistics.

The community service of the Orange Memorial Hospital is not limited to the city of Orange alone. This fact is of considerable practical importance with regard to the financial and general support of the institution. An analysis of the admissions during 1915 proves conclusively the far-reaching importance of the Memorial Hospital to all the Oranges. The following table shows the admissions, whether free and part-pay patients, or private and semiprivate patients, for each of the Oranges, and with reference to population:

ADMISSIONS DURING 1915[1]

| City | Population 1915 (estimated) | Private and semi-private patients | Free and part-pay patients | Total patients | Rate per 1,000 of population |
|---|---|---|---|---|---|
| Orange | 32,375 | 129 | 821 | 950 | 29.3 |
| East Orange | 40,804 | 231 | 291 | 522 | 12.8 |
| West Orange | 13,026 | 59 | 227 | 286 | 22.0 |
| South Orange | 6,717 | 69 | 81 | 150 | 22.3 |
| Total, Oranges | 92,922 | 488 | 1,420 | 1,908 | 20.5 |
| Newark | ..... | 30 | 90 | 120 | .... |
| Other cities | ..... | 131 | 115 | 246 | .... |
| Total | ..... | 649 | 1,625 | 2,274 | .... |

[1]Male and female, white and colored.

It is shown that out of 2,274 patients admitted during 1915, 1,908, or 83.9 percent, were from the Oranges; 120, or 5.3 percent, were from Newark; and 246, or 10.8 percent, were from other cities. In proportion to population, the admission rate for the city of Orange was 29.3; for East Orange, 12.8; for West Orange, 22.0; for South Orange, 22.3 per 1,000. Considering free and part-pay patients only, the admission rate for Orange was 25.4; for East Orange, 7.1; for West Orange, 17.4; and for South Orange, 12.1 per 1,000 population. Considering private and semiprivate patients only, the admission rate for Orange was 4.0; for East Orange, 5.7; for West Orange, 4.5; and for South Orange, 10.3 per 1,000 population. For all the Oranges combined, the admission rate for free and part-pay patients was 15.3, and for private and semiprivate patients, 5.3 per 1,000 population.

The analysis shows conclusively the great advantage of adequate hospital facilities for private and semiprivate treatment to patients having their residence in East Orange, West Orange, and South Orange. It is only natural that the relative admissions of free and part-pay patients should be highest for Orange, but the admission rate is also relatively high for West Orange. The influence of the institution, however, extends beyond the four Oranges, and includes Newark and other cities. For these cities, of course, the admission rates in proportion to population would be of no value. The data establish in the most convincing manner the far-reaching community service rendered by the Orange Memorial Hospital, and by inference suggest the generous voluntary financial support from all the communities concerned.

## WEST VIRGINIA HOSPITAL MEETING

### Newly Formed Association to Hold Second Annual Meeting—Good Program Assured

The next annual meeting of the West Virginia Hospital Association will be held in Wheeling, May 18, at the McLure Hotel.

The West Virginia State Medical Association holds its meeting at the same place on May 16, 17, and 18, and it is expected that May 18 will be practically given over to discussions of hospital problems, both associations taking part.

Secretary-Treasurer Dr. W. H. St. Clair, of Bluefield, has had unusual difficulties to overcome in getting up his program, but promises that eventually it will be full of interest and profit to the hospital people and physicians of the state. Among those already assured for papers are Howell Wright, of Cleveland, secretary of the Ohio Hospital Association; Dr. Wingerter and Mr. E. A. Sinks, of Wheeling, and D. C. L. Bonifield, of Cincinnati.

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The small hospital should offer the country population the same advantages that the large hospital extends to the city population. It should be an institution which can be reached in a short time and which should assure the sick proper care and treatment. It should have special facilities to isolate patients with contagious diseases.—Helwes.

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Second only to fresh air, I should be inclined to rank light in importance for the sick. Direct sunlight, not only daylight, is necessary for speedy recovery, except perhaps in certain ophthalmic and a small number of other cases.—Florence Nightingale.

Fig. 1. Cambridge Hospital. Bird's-eye view.

## CAMBRIDGE HOSPITAL'S NEW HOME AND FINE ORGANIZATION

### After Many Vicissitudes, Institution on Charles River Assumes Large Size—Organizations of Men and Women Divide Work in Many Branches of Public Health—Some of the Features of the New Building

By CHARLES N. COGSWELL, Architect, Boston

IN 1867 Miss Emily Parsons, who had served as a nurse for two years in army hospitals during the Civil War, opened a hospital in Cambridge for women and children. It remained open for a year, and was then temporarily given up on account of the difficulty of finding a house suitable for the purpose. In 1869 a house was found, and the hospital again opened. In 1871 the unselfish and devoted efforts of Miss Parsons led several prominent citizens to procure an act of incorporation for the Cambridge Hospital, but even then the money necessary to sustain the charity was not obtained, and in 1872 the hospital was again closed. It was not until the year 1881 that the pressing need of some provision for the sick of Cambridge dependent on treatment in some hospital became so apparent that a successful attempt was made to raise funds sufficient to reestablish the institution. Dr. Morrill Wyman, in his day one of the foremost physicians in the country, was very active in this early work.

Mr. Isaac Fay was the first large benefactor of the new enterprise, and bequeathed to the hospital the sum of $10,000 to be used for a building fund. Several generous gifts were received, and a substantial addition to the funds was made from the proceeds of a fair held by the women in Cambridge. The public interest had at last been thoroughly awakened, and in 1883 the lot of land on which the hospital now stands was purchased. The erection of buildings was begun in 1884, and the Cambridge Hospital was opened for the reception of patients May 1, 1886.

The site of the hospital is a lot of nine acres on the bank of the Charles river. The soil is dry gravel, the buildings stand twenty-five feet above the river and sufficiently distant from its bank, with a fine view across the river of the broad expanse of the Metropolitan Park drive and the Harvard athletic field, with its picturesque stadium. The hospital stands between the Stillman Infirmary of Harvard College and the Cambridge Home for Aged People, and is on the electric car line.

The original hospital, planned by William E. Chamberlin, architect, consisted of a main building of three stories and basement, which housed all departments of a cottage hospital, including private rooms and two one-story wards, the whole forming three sides of a hollow square, with the opening toward the south and the river. The male ward was given as a memorial by Mr. Francis C. Foster, of Cambridge. The total capacity of the hospital was between 30 and 40 beds.

The first addition to the hospital plant was a separate brick cottage, erected near the river bank on the southern portion of the property, for the care of patients sick with communicable diseases. Some years afterward a comfortable and much-needed two-story brick building for the nurses was

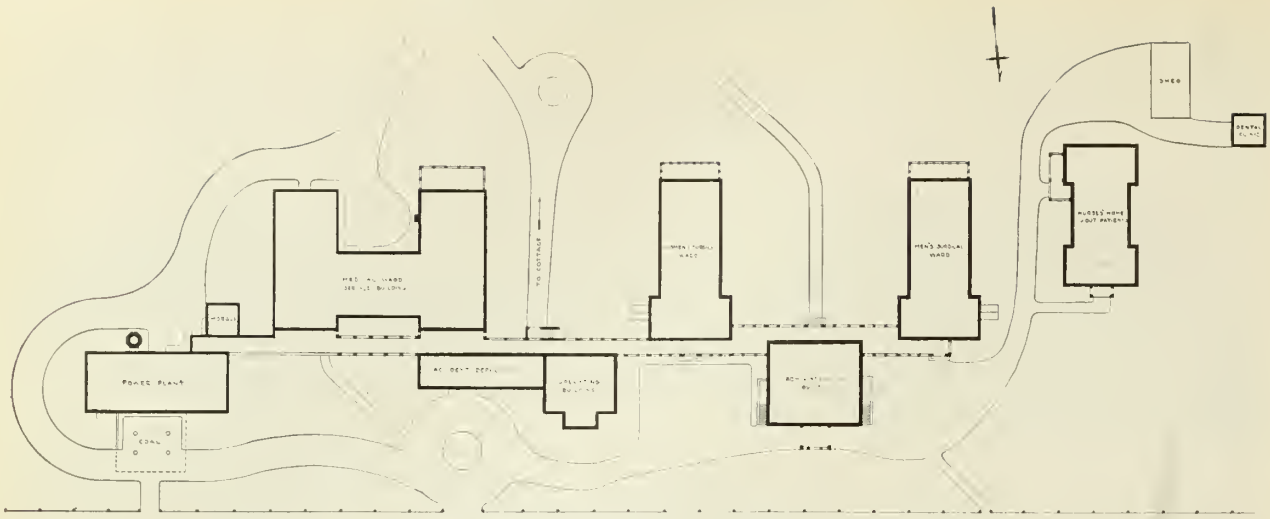

Fig. 2. Cambridge Hospital. Block plan.

opened. The southern portion of the basement of this building was fitted up as an out-patient department. The next addition was a building for surgical operations, completely adapted to its purposes and easily accessible from the wards and the administration building.

The generous bequest under the will of Mrs. Fiske Collard made it possible for the hospital to start a larger addition to the existing plant, and in 1913 a new building, planned by Charles N. Cogswell, architect, was opened, which increased the total capacity of the hospital to more than 75 beds, and a general rearrangement of the different departments was made. A large separate heating and power plant was installed for all the buildings except the nurses' home and the cottage, with ample space for future growth.

The new building is of red brick, with artificial stone trimmings, and has a flat composition roof. The first floor is of reinforced concrete construction. The general framing elsewhere is of wood, supported on steel girders and columns, and all stairways are of steel construction, with slate treads. The building has an electric elevator and

Fig. 3. Cambridge Hospital. Basement floor plan.

Fig. 4. Cambridge Hospital. First floor plan.

hydraulic food lifts. The general heating is by direct steam radiators, supplemented by a plenum fan system, which supplies a filtered and tempered air supply. The foul air vent ducts are provided with steam coils near their discharge points.

The basement is devoted to the laundry, with its soiled and clean linen rooms, the large general kitchen, etc., the refrigerators and refrigerating machinery, and the artificial ventilation plant. Excellent natural light is obtained, as the important portions of the basement are to the south and the windows are above grade. The basement contains also a morgue, a fumigating room for bedding, and a well-equipped x-ray department.

The first floor of this building, which is at the grade of the basement of the original hospital, has an emergency accident department on the front, conveniently situated for ambulance cases, and the pathological laboratory. One wing contains the dining rooms for interns and nurses and a general pharmacy. The remaining portion of the space on this floor contains the sleeping quarters of the women servants of the hospital. Some are in private rooms and the remainder in a large double cubicle dormitory. The housekeeper's suite is nearby.

The second floor contains an open male medical ward, with solarium, a small ward for two or three children, and four private wards. There is also a diet kitchen, a duty room, and bath and toilet rooms. The quarters for the interns and the male ward attendants occupy the whole area of the eastern wing.

The female medical ward on the third and top floor is on the same plan is the male ward below. The maternity department is situated in the eastern wing of this upper floor. Patients may enter the open ward or engage a private room. There is a well-equipped case room, with sound-deadened walls and floor, and a crib room. Food is served from the general diet kitchen on the same floor, but the department has its own duty and sterilizing rooms. With the general change to apartment house living, noticeable in all our cities, it is felt that the maternity department of the hospital will be of constantly growing importance.

The general finish is of ash and the upper floors are of maple. Heavy battleship linoleum is used as trackers in the main corridors and wards of the hospital portions, and completely covers the hardwood floors of all diet kitchens, duty rooms, etc.

The hospital is governed by a board of trustees, composed of twelve prominent citizens of Cambridge. Dr. Morrill Wyman was president of the board until 1892, and since then Dr. Henry P.

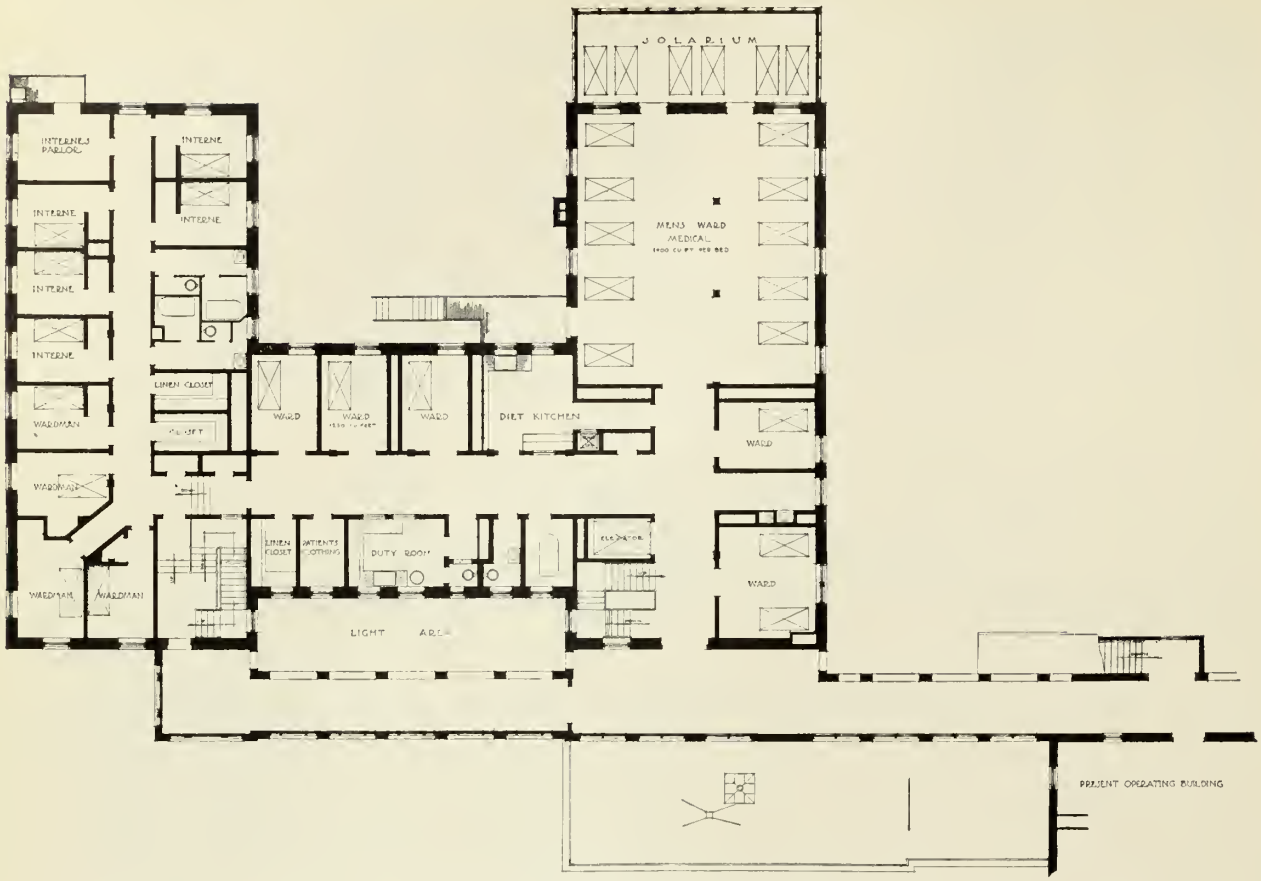


Fig. 5. Cambridge Hospital. Second floor plan.

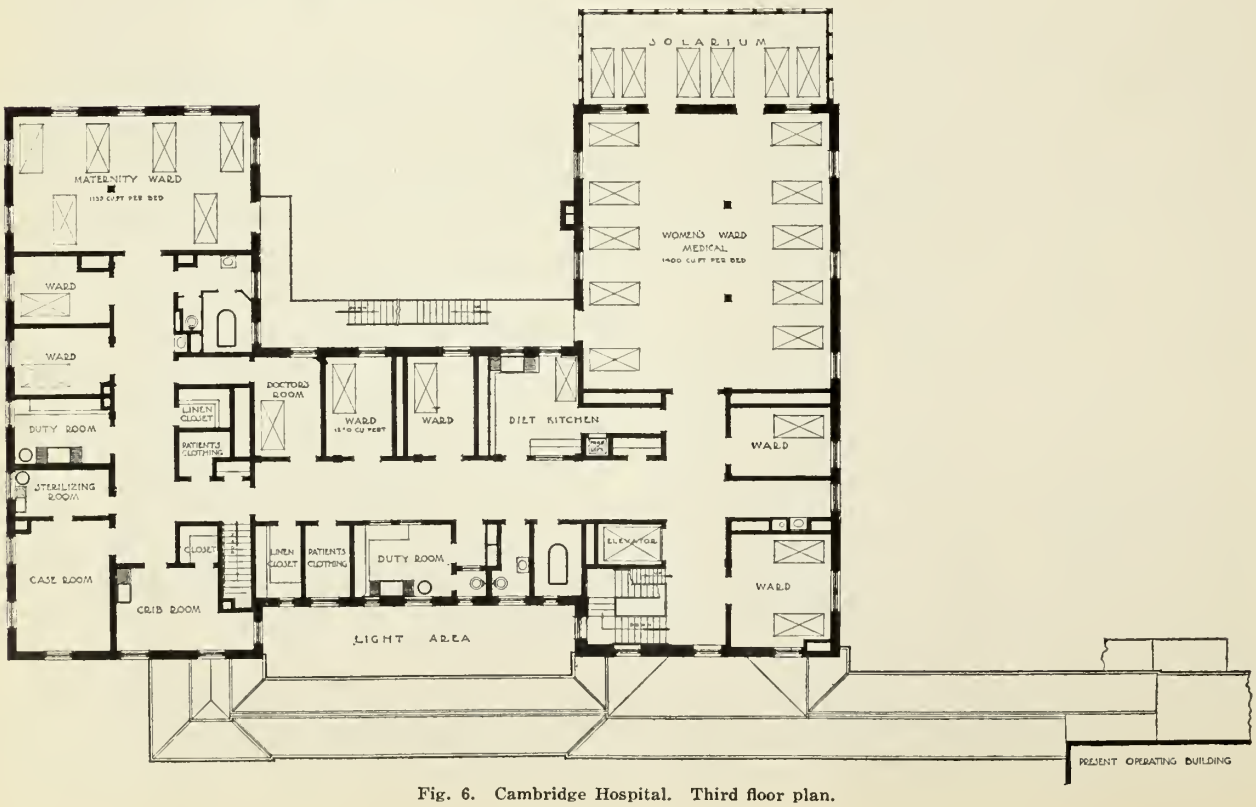


Fig. 6. Cambridge Hospital. Third floor plan.

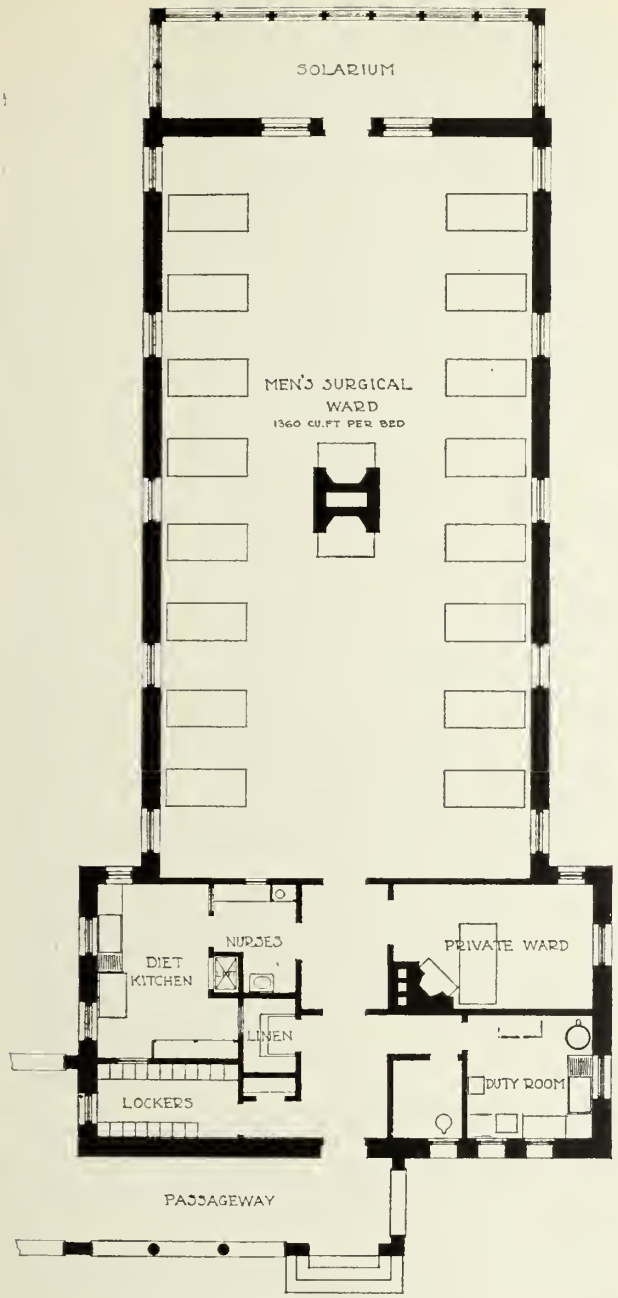


Fig. 7. Cambridge Hospital. Roof plan.

Walcott has been president. Dr. Walcott has been a trustee since 1874, and, though burdened with many other important and responsible duties, has devoted much time and thought to the needs of the hospital.

The medical staff of the hospital is composed of four visiting physicians, who serve three months each in rotation. The surgical staff consists of three visiting surgeons and three assistant surgeons, each of whom is on duty four months each year. There is also an out-patient department of six physicians and special consulting physicians for diseases of the ear, throat, eye, nervous system, and orthopedics.

The hospital maintains a training school for nurses. The course offered covers a period of three years, and consists of lectures, demonstrations, and recitations, with examinations in each subject, besides the usual routine training in the wards. During the third year the pupil nurses have the opportunity to act as head nurses. They receive special training in obstetrics and have a two months' service with the Cambridge Visiting Nursing Association. It is planned also to give the senior nurses some insight into social service work.

The Cambridge Hospital League is the woman's auxiliary to the hospital, and consists of three departments. The financial department raises all funds necessary for salaries, etc., in the social service work, thus relieving the hospital trustees of the support of that important portion of modern hospital work. The Woman's Aid Association supplies linen for the hospital beds, and furnishes the patients with extra comforts. Members of the association make regular inspections of the hospital and visit the patients. The department of social service is the chief branch of the league, and the work is carried on by a trained social worker, aided by an assistant and a number of volunteer workers. It is directed by an advisory committee, composed of representatives of the staff of the league and of several philanthropic agencies outside of the hospital. This department adds greatly to the efficiency of the hospital by the investigation of the social factors in the causation and prevention of disease, and by its advice and help to individual patients who need more than medical or surgical treatment.

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A corporation has recently been formed at Lake Charles, La., for the purpose of establishing a hospital for negroes. Drs. Geo. S. Price, M. J. Marmillion, and W. C. Hayes are members of the advisory committee.

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In general, it is advisable to limit the number of patients for a hospital, and rather to establish several medium-sized hospitals at different places than to centralize too much.—Max Rubner.

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The cornerstone of a new hospital for tropical diseases, the first institution of its kind to be established in the tropical portion of the British empire, was laid at Calcutta a short time ago. The hospital is said to have been generously endowed by wealthy Hindus and also to have received support from commercial circles and from the Rockefeller Foundation.

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Simplicity of construction, involving, as it should always, a provision of abundant light and ventilation through every part of the hospital in which sick are placed, can be secured in hospitals of any size only by separating the administrative part from the sick part. The smallest country hospital should consist of at least two blocks of building.—Florence Nightingale.

## SOME CONVENIENT ACCESSORIES FOR ROENTGENOTHERAPY

### The Therapy Flasher—The Water-Cooled Tube—Water Circulating Pump—Sealed Water Cap—The Coolidge Tube—Tube Stand—Treatment Records—Protection for the Operator—Some Technical Requisites for Good Work

By E. BLAINE, M. D., Roentgenologist Cook County Hospital, Chicago

A SINGLE x-ray treatment, given for a superficial lesion with the ordinary gas tube of from 3- to 4-inch resistance for the usual 15- or 20-milliampere minute exposure, presents but few difficulties to the roentgenologist. The average well-seasoned x-ray tube will remain fairly constant under this relatively small amount of energizing, but at the end of such a treatment the quality of x-ray delivered will have become somewhat less hard, due to a partial loss in vacuum through the heating of the metal and glass walls of the tube, with a consequent freeing of gas residual in these parts, than it was at the beginning of the exposure. But when multiple areas or many patients are to be treated in rapid succession, and when "massive doses" in deep therapy are to be administered, our problem becomes more complicated.

Very few tubes will remain constant under the accumulated heat of many minutes of continuous exposure. Greater amounts of current are necessary to produce x-ray of sufficient penetration and amount to be of value in reaching the deeper tissues of the body. In order to keep the tube constant in x-ray output under these high pressure conditions, it is necessary to adopt measures to keep it from losing its vacuum and to preserve as much as possible the proper degree of resistance. It has been found that when the tube current is periodically interrupted even for a moment, it will remain more constant for a considerably greater length of time and at a higher degree of penetration than when a continuous exposure is made, and that more amperage can be obtained with less heating of the tube through such interruptions.

#### THERAPY FLASHER

At the Cook County Hospital this was accomplished in a large measure by placing in the primary circuit of the generating apparatus a so-called "therapy flasher." The instrument rhythmically makes and breaks the tube current so that it is flashed on and off at certain intervals. This flasher has proved to be very practical and efficient in keeping a single tube stable enough to permit the administration of many average 15- to 20-milliampere minute doses in rapid succession. Our experience is similar to that of Skinner, who writes regarding it: "We thought the instrument would increase the time of our therapy cases, but, on the contrary, find that it lessens the amount of time necessary to hold a patient on the table because we are able to give four to five times the amount of milliamperage through the tube than we formally did. . . . Several of our tubes permit us to pass 4 to 5 milliamperes for ten minutes with a one-third on two-thirds off interval, which gives us practically 40 to 50 milliampere minutes in that time. Furthermore, our tubes hold the same degree of vacuum or penetration through the entire treatment.

The apparatus consists of a motor-driven rotating switch, which operates in oil to prevent arcing, the speed of the motor being regulated by a small rheostat, the current supply being the ordinary house current. There are three different flashing intervals possible with the instrument, a switch being provided for (a) on one-half and off one-half period, (b) on one-third and off two-thirds period, (c) on two-thirds and off one-third period. By varying the speed of the motor any desired length of flash up to one second may be obtained. The interval used governs the length of treatment—thus an elapsed time of fifteen minutes with one-third on two-thirds off will give an interval exposure of five minutes, with one-half on one-half off will equal seven and one-half minutes of exposure, and with two-thirds on one-third off it will be ten minutes. This form of interrupted x-ray exposure is in considerable use in the European clinics using massive doses. A so-called "rythmeur" is used, which is similar to the "flasher." Many American roentgenologists have been using the ordinary gas tube for therapy almost entirely up to the past year. For those who still prefer to use this tube a combination with a therapy flasher will result in obtaining far better therapeutic x-ray because the tube will remain constant for a much longer time.

#### WATER-COOLED TUBES

In the Freiburg and other European clinics massive doses are given in abdominal lesions, such as fibroids, myomas, etc., in some instances more than 300 x-units being given in one series and at times more than a total of 1,500 x-units to a single patient in repeated cycles. In addition to the use of the "rythmeur," they make use of water-cooled tubes, as such tubes can be energized more intensely for a longer exposure period with less

change in vacuum than the nonwater-cooled tube. But even such tubes will not remain stable long enough to give a complete series of massive doses, on account of the great heat generated, which results in a loss in vacuum, and therapeutic value is destroyed when the tube becomes "blue." To offset this loss in usefulness, they "relay" their tubes. An attendant cools off an alternate tube with which to replace the one in use when it becomes too hot. This is done by using a gallon water bottle, such as is used in irrigations, which has a rubber tube attached to the outlet in the lower part of the bottle; the opposite end of the rubber tube is inserted in the water reservoir of the x-tube. The bottle is alternately raised and lowered, the action of the siphonage withdrawing the heated water into the bottle, mixing it with cold water. It is then raised, causing the water of cooler temperature to flow back into the reservoir of the tube. This cools off the tube for a succeeding relay. In a large clinic this necessitates having a large supply of tubes constantly on hand, a very considerable item of laboratory expense. Gauss and Lembke in their book "Roentgentiefentherapie" speak of having fifty tubes on hand. This number of water-cooled tubes at the price of $50 each would represent an investment of $2,500, almost an impossibility in any American x-ray laboratory, where hospital managers will scarcely allow that sum for the entire equipment of the department.

### WATER CIRCULATING PUMP

On account of the continued increase in the number of x-ray treatments in Cook County Hospital (some days 26 to 30 patients receive treatment), it was determined to use water-cooled tubes. We found that these tubes would permit us to give almost as much x-ray without the use of the interrupted exposures as we did with the nonwater-cooled tubes and flasher. If we could give continuous exposures, it would enable us to treat a larger number of patients in an equal amount of time—a very desirable item—but under intensive driving the point of boiling was reached too soon. In order to prevent the water from boiling and the consequent loss in vacuum, a circulating pump was used. It was of the piston or plunger type, driven by a small motor and connected to the x-tube by means of two flexible rubber tubes, one for the flow of water to and the other for the return from the anode.

This pump was found to have several drawbacks. The character of the circulating stream with this plunger pump was a pulsating, intermittent one, and did not carry the heat off as fast as was required to keep the tube steady, and a leakage of water around the piston made a possible path for the current to ground. For these reasons this form of pump was discarded for one of the centrifugal type, because the stream is continuous, even, and steady. The rotating blades are immersed deep in a glass jar of about ten gallons capacity, and thus all possibility of leaks is eliminated. The pump is mounted on a shelf above the level of the tube, the shelf being thoroughly insulated to prevent the high tension current from reaching the low tension wiring which carries the current to the motor of the pump. This water circulating pump has enabled us to use a certain tube for more than six months without once removing it from the tube holder. This tube was used in treating an average of 15 patients per afternoon, each treatment following rapidly on the other as fast as patients could be changed. The treatments varied from three to six, sometimes ten, minutes in length, the tube remaining constant at from 5- to 6-inch resistance at 3 to 5 milliamperes. The tube did not require stopping to permit cooling. During actual use the vacuum was found to increase in resistance instead of the usual decrease, so that the reducer had to be used to prevent its becoming too high.

### SEALED WATER CAP

The metal cap on the water chamber of the tube is usually water-tight under ordinary conditions. With the use of the water circulating pump, however, the pressure exerted causes this cap to leak, the water constantly working by the threads of the cap and running down the outside of the tube, often dropping on the patient. Many forms of washers and gaskets were tried to check this leak, but with no success. Finally it was decided to seal the cap, and we found no real need of having it removable. The sealing was done with litharge, and now we have no more leaks with which to contend. With the use of the pump and the sealing of the metal cap as described, the tube can be used in any position, even upside down, without leaking, although it is of greatest importance in this position that no bubble of air be present. An air bubble would rise to the highest point, which, if the tube is inverted, would be directly behind the anode, the result of which would be a ruined tube through the puncturing of the thin metal anode by the cathode stream.

### TUBE RESERVOIR

The bulb-shaped water reservoir, common to the water-cooled tube, is large and at times in the way in the usual lead glass bowl. This chamber was found to be unnecessary with the water circulating pump, the ten-gallon tank taking the

place of the reservoir on the tube; so the tube maker changed the design of our tubes by removing this bulbous portion, which makes the tube easier to handle and much less bulky.

### THE COOLIDGE TUBE

The greatest single addition to roentgen armamentarium in recent years is the development and introduction of the "ion" or Coolidge tube. This tube is especially valuable in therapeutical work where intensive dosages are to be given, as it is capable of delivering x-rays of a penetration far in excess of those obtainable with the ordinary gas tube.

Roentgenologists who have used the Coolidge tube are unanimous in agreeing that this is the tube "par excellence" for x-ray therapy. It is possible with this tube to duplicate today the treatment of yesterday with great accuracy. It has been found that with duplicate setting of apparatus—e. g., spark gap, target-skin distance, filter and rheostat position—doses identical in quantity and quality are obtained in an equal time of exposure. Its particular advantage lies in its ability to remain constant at any predetermined spark gap resistance, the quality of x-ray delivered being the same throughout the treatment. Three Coolidge tubes have been in constant use in Cook County Hospital for more than one year without the least evidence of change or deterioration. For deep therapy the formula in present use is approximately a 9-inch spark gap, between 5 and 6 milliamperes at 7-inch target-skin distance for four minutes of exposure, through a filter consisting of 4 mm. of aluminum and sole leather.

In treating abdominal and pelvic lesions, multiple areas are exposed, as many as twenty-four being given by the cross-fire method. It is found to be convenient to give six areas at one sitting, dividing the series into four consecutive days. For superficial lesions, such as epitheliomas, the spark gap is approximately 5 inches, 9 to 10 milliamperes, one minute exposure through 1 millimeter of aluminum. As long as the cathode temperature remains constant, the resistance of the tube is practically unchanged, regardless of the heat of the target or the walls of the tube. The target becomes quite hot under this amount of energizing—always a cause for wonder to those accustomed to the gas tube who view the Coolidge tube in action for the first time. No fan, blower, or other cooling device is used with this intensive driving, without the slightest impairment of its action. In some laboratories an electric blower is used to keep the walls of the tube from becoming too hot, but we have not found it necessary to employ such cooling.

### TUBE STAND

The tube holder used is an open treatment tube stand, which permits a minimum target to skin distance of 5 inches. (In the technic employed in this laboratory the target distance is 7 inches.) A tube stand arranged for swiveling the tube and bowl 45 degrees each side of the usual position is a decided convenience. This permits rotating the tube so that the terminals will not be too close to the patient's skin when it is tilted in cross-firing. It also allows greater ease in setting the tube in treatments of the neck and other places difficult to approach.

Treatment tube stands which are inclosed in a lead-lined box, the sides of which closely approach the tube, are very liable to permit puncturing when a 9-inch spark gap is used. The tube is not entirely protected, as there is an escape of x-ray at the ends of the tube. A thoroughly protected tube will necessarily require a box of large dimensions, such as is used on roentgenoscopic apparatus, and this would be too large to handle conveniently in therapeutical work.

A 10-K. V. A. interrupterless transformer, open core, is used to obtain the 9-inch spark gap, and is in constant daily use, running continuously for hours at a time. The Coolidge filament circuit is energized by a small transformer especially designed to give the required amount of amperage. This is provided with a convenient control, which enables the operator to regulate its intensity so that any desired spark gap may be obtained. All the controls for the apparatus and tube—the starting switches, rheostat, spark gap indicator, vacuum reducer (for gas tubes), Coolidge current regulator, meters, etc., are placed in a lead-lined operating booth, which affords proper protection to the operator.

An overhead system of four wires with self-winding trolleys is a convenience in x-ray therapy. The wires are out of the way and the tube can easily be connected. Two of the overhead wires are for the Coolidge tube current. The wire used on the two trolleys which carry the cathode current must be of copper, as the ordinary tinsel cord will not carry this low-tension current. The main spark gap can be removed from the transformer and mounted at the farther end of the overhead wires, making it convenient to measure as well as to see the actual resistance of the tube at any moment. With the transformer in another room it is difficult to find the spark gap resistance of the tube in use.

The output of the tube is measured and standardized by photometric quantimeter. Many treatments have been measured and recorded and found to be invariably the same on each succeeding test.

This being the case, it will be seen that it becomes less necessary to actually measure each individual dose administered, provided the formula of the tube regulation and time of exposure be accurately observed. This is of interest in view of the difficulty in obtaining photometric strips due to conditions in Europe; thus we note another valuable feature of this wonderful tube—the security in knowing exactly how much x-ray is being given in each treatment, an impossibility with the gas tube. The x-ray output at different settings of the tube for various lengths of exposure and under several thicknesses of aluminum has been carefully noted. It is found that 1 x-unit is given in 1 milliampere minute through 4 millimeters of aluminum at 9-inch tube resistance, 7-inch target-skin distance. Knowing this, we can govern the amount of x-ray given to each area by varying the time of exposure. Thus 10x is delivered in two minutes at 5 milliamperes, 20x in 4 minutes, etc.

### TREATMENT RECORDS

It is important that accurate records be kept of each treatment given. This will enable the observer to make comparisons between the different cases and provide a valuable reference, as well as data for his own protection in medicolegal complications. The record should show, in addition to the regular items of name, disease, etc., the exact area or areas treated, number of minutes of exposure, milliamperage spark-gap, target-skin distance, filter used, and number of x-units or other measure given. It is well to note that 4 Hampson, 5 Holzknecht, tint "B" SN (Saboroud & Noire), and 10x (Kienboeck) are equal amounts of x-ray dosage, these figures representing on respective scales the average normal dose which will result in a mild erythema of the skin of the area exposed.

The form given below has been found to cover the requirements in x-ray therapy.

On the reverse side of this form an anatomical outline is stamped on which is indicated the exact area treated, an anterior and posterior figure being used.

### PROTECTION

The use of the Coolidge tube in giving massive doses of high penetration makes it imperative to carefully protect the skin of all parts of the body, excepting the area under treatment. This is an inconvenience both to roentgenologist and patient; the former often finds it most difficult to arrange the protecting medium in such a manner as not to interfere with the working of the tube, the latter having to bear the weight of heavy lead sheeting. Of the material used, the ordinary x-ray foil does not protect the skin from high penetrating rays given by a tube of 9-inch resistance. A plate placed under this material can easily be fogged by direct rays. The so-called x-ray proof rubber cloth of which our protective aprons are made is also penetrated by these high rays.

The best protection against the primary ray is sheet lead of a thickness of at least $^1/_{20}$ inch. Secondary rays can be only completely overcome by surrounding the body on six sides. The weight of large sheets of lead is very inconvenient to handle in covering the patient, and the latter certainly is not comfortable when two or three large pieces are laid over abdomen and other parts of the body. These difficulties may be lessened by the use of an adjustable bed table, such as is used in the sick room, on the top of which is fastened a sheet of $^1/_{20}$-inch lead about 24 by 30 inches. Two such tables are used, one for the side of the tube toward the patient's feet and the other on the side toward the head. By tilting the lead-covered top, all direct rays are cut off. When multiple areas are to be treated in cross-firing at deep-seated lesions, a sheet of lead large enough to cover the entire abdomen is used. This piece of lead has twelve 2x2 holes cut in it, these being arranged in three rows of four openings, representing the twelve areas to be treated. The upper border of the top row is placed directly over the umbilicus; the median line of the patient's body being the vertical line for the middle of the sheet. Over the opening to be treated is placed the single opening of a rectangular piece of lead, which covers all the other openings and which, in order to keep as

COOK COUNTY HOSPITAL—X-RAY DEPARTMENT

Name.....M. F. Age.....Weight.....Ward.....Bl-Br.....

Address.....

Treatment for.....Part.....Diagnosis { Clinical / Microsc.

Remarks.....

| | Date | Area treated | Min. | Sp. gap | M. amp. | Tar. skin | Filter | Meas. | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |

The form is 11 inches long by 8½ inches wide and has lines for each day of the month.

much weight as possible off the patient, is held in the jaws of an ordinary tube holder. This opening is shifted to each successive area to be treated. The particular value of this arrangement lies in the automatic marking of the areas to be treated and the protection against overlapping, the lead between each opening covering a small strip of skin which gets no x-ray. This same sheet is also used on the posterior surface of the body. Each opening is numbered consecutively, and the order of treatment proceeds in numerical progression to avoid error. In treating such areas as the neck and submaxillary region, one's ingenuity is often put to the test in arranging the protection and the tube in such a manner as to get the proper target-skin distance without having the tube ends come too close to the body. But by using great care, one is able to avoid "overlapping," which will, when massive doses are given, most often result in an undesired skin reaction.

In conclusion, the essayist ventures to hope that the various items noted may prove helpful to others engaged in the daily application of this form of energy, which has been proved to be of much therapeutical value when properly applied, and that they do not forget that, while potent for much good, it is also capable of doing much harm.

## COFFEE SUBSTITUTES AND HYGIENIC COFFEES

### The Former Practice of Adulterating Coffee Now Almost Obsolete, But Attempts to Remove So-called Harmful Elements Only Partially Successful—Some Analyses of Value, With Interpretation for the Clinician

By JOHN PHILLIPS STREET, Chemist Connecticut Agricultural Experiment Station

MILLIONS of pounds of coffee are imported into this country each year. Its popularity as a beverage is unquestioned, and its constantly increasing use has presented the problem of its effect on the human organism. The ingredients of coffee, to which have been attributed harmful results, are its volatile oil caffeol, its tannin caffetanic acid, and its alkaloid caffeine. Various manufacturers have emphasized the harmful effects of one or the other of these ingredients, depending generally on its absence from the particular commodity which they wished to market. Consequently we have "vacuum," "detannated," and "caffeine-free" coffees, for which the partial or complete removal of caffeol, caffetannic acid, or caffeine, respectively, is claimed. The fact that these preparations make certain definite hygienic claims renders them a subject for consideration by the dietitian, and the claim that eleven millions of pounds of coffee are used annually in our hospitals alone gives the problem more than passing interest.

As is well known, the coffee bean before use must be roasted. The roasting process drives off most of the water, caramelizes a part of the sugar, and develops the caffeol, to which the peculiar flavor and aroma of coffee are due. The following average analysis of Santos, Porto Rico, Rio, Mocha, and Java coffees by Lythgoe shows well the composition of roasted coffees:

| | | | |
|---|---|---|---|
| Water | 2.16 | Petroleum ether extract | 13.75 |
| Ash | 4.03 | Cold water extract | 22.63 |
| Ash, water-soluble | 3.26 | Alcohol extract | 17.03 |
| Phosphoric acid | 0.61 | Total nitrogen | 2.27 |
| Reducing sugars | 0.75 | Caffeine | 1.20 |
| Crude starch | 2.30 | Alkalinity of ash[1] | 3.55 |
| Fiber | 13.03 | Solids in 10% extract | 2.72 |
| | | Ash in 10% extract | 0.37 |

Caffetannic acid, which was not determined by Lythgoe, generally occurs to the extent of from 10 to 12 percent.

Until recent years coffee, especially in the ground condition, has been a fertile field for the food adulterator. In ground coffee have been found peas, beans, wheat, rye, oats, chicory, brown bread, charcoal, canna seed, sawdust, boiled liver, slate, various barks, and dried pellets, the latter consisting of ground peas and cereals bound together with molasses. Whole coffee has been adulterated with chicory and the pellets referred to above, and artificial beans have been found which closely resembled the genuine bean in appearance even to the cleft in the sides.

Raw coffee beans have also been found treated in a way similar to the facing of tea leaves, with the intent of giving a superior appearance to cheap and inferior grades, various pigments having been employed for the purpose. Glazing has also been resorted to, the beans being dipped in egg or sugar, or both. A claim made in favor of this practice is that it improves the keeping qualities of the coffee and aids in clarifying the infusion. It would appear, however, that in many cases the purpose was to deceive the consumer by an appearance of superiority.

In spite of the above long list of coffee adul-

[1] cc. $\frac{N}{10}$ acid per gram of coffee.

terants, it is only fair to state that at least in this state (Connecticut) the adulteration of even ground coffee is largely a thing of the past. The sale of pure coffees of low quality, however, for the high-grade article of course still persists.

### COFFEE SUBSTITUTES

Because of the alleged injurious effects of habitual coffee drinking, various substitutes have been offered, which yield a beverage more or less similar in appearance to coffee, and in a few rare instances a coffee-like flavor. Some of these substitutes have been found to be glaringly dishonest, as coffee still remained as one of their important constituents; in others, however, coffee is entirely absent, and the integrity of their claims as to composition is beyond question. Among such substitutes may be mentioned Mogdad coffee (the seeds of *Cassia occidentalis*) and Mussaenda coffee (the seeds of *Gaertnera vaginata*), neither of which contains caffeine. These, however, have never enjoyed wide popularity in this country. More generally used substitutes are chicory, acorns, figs, date stones, dried pears, dandelion roots, grape seeds, legumes, and various cereal preparations, with or without molasses.

The following are some of the best known coffee substitutes sold in this country:

Old Grist Mill Entire Wheat Coffee (roasted wheat product).

Ayer's Hygienic Substitute for Coffee, New Era Improved Hygienic Coffee, Shredded Cereal Coffee, and Clark's Phosphi Cereal Nervine Coffee (all chiefly roasted cereals, with no coffee).

Date Stone Coffee (date stones ground and roasted).

Fischer Mills Fresh Roasted Malt Coffee and Kneipp Malt Coffee (whole barley kernels roasted).

Postum Cereal and Grain-O (roasted cereals and molasses).

Hayward's French Breakfast Coffee Compound (chiefly roasted ground peas and cereals).

Johan Hoff's Malt Coffee (malt and chicory).

Johnson's Educator Substitute for Coffee (roasted cereals).

Instant Postum (wheat and molasses).

Kaffeebrod (roasted cereals).

Minute Brew and Caramel Cereal (wheat product).

Dieto Barley Coffee (roasted barley).

Monco (roasted cereals and vegetables).

Fitch's Grains of Health (roasted peas, with a small amount of coffee).

Bonano (dried bananas).

The analyses of some of these brands are given in the table below, all of the analyses having been made in this laboratory. The writer has at hand no analysis of the much-advertised Postum Cereal. This preparation, however, has been frequently reported as free from coffee; according to the manufacturers, Instant Postum is simply Postum Cereal concentrated and with nothing added.

None of the brands in the table contains coffee.

### HYGIENIC COFFEES

In spite of the claims of the manufacturers, most of the coffee substitutes are at best but poor imitations of coffee to the palate of the coffee lover. Accordingly the attempt has been made by certain manufacturers to offer genuine coffee treated by various processes whereby the objectionable ingredients have been more or less eliminated. The claims made for a very few of these products are entirely honest, while for others false and exaggerated claims predominate. These products are chiefly of three kinds—those which have been subjected to processes by which it is claimed that either caffeol, the caffetannic acid, or the caffeine has been eliminated. In two brands at least the claim is made that all, or nearly all, of both the caffetannic acid and the caffeine have been removed. The following well-known brands belong to this class of coffees:

Digesto Coffee ("contains no caffeine or tannin").

De-tan-ated Brand Coffee, later Puri-tan-ated Coffee ("tannic acid entirely eliminated").

Royal Dutch Coffee ("prepared by the Beach process, which removes by steam, before roasting, the tannic acid").

Granger's Fairy Cup Instant Soluble Coffee ("nearly all the caffeine and tannic acid is discarded").

Hanley & Kinsella's Vacuum Packed Coffee (specific claims unknown, but the use of the word "vacuum" is suggestive).

Kaffee Hag ("95 percent of the caffeine removed").

G. Washington Prepared Coffee, Crystal ("refined," "the coffee berry contains antidigestive, deleterious substances, which are not essentials of the true coffee when refined. . . . Mr. Washington's refining process eliminates these harmful, indigestible substances").

Café des Invalides ("does not produce nervousness or wakefulness").

Richelieu Brand Vacuum Improved Coffee ("subjected before roasting to the Evers vacuum process." The manufacturer claims that caffeine is not a harmful ingredient, although the original patentee of the Evers process claimed

| Brand | Water | Protein | Fiber | Nitrogen-free extract | Fat | Ash | Starch |
|---|---|---|---|---|---|---|---|
| Date Stone Coffee (1897) | 5.52 | 6.69 | 15.84 | 59.00 | 11.20 | 1.75 | ....* |
| Educator Cereal Coffee (1911) | 5.58 | 16.25 | 8.70 | 65.05 | 1.88 | 2.54 | 42.57 |
| Instant Postum (1913) | 5.56 | 6.13 | 0.09 | 76.78 | 0.06 | 11.38 | ....* |
| Kaffeebrod (1913) | 4.50 | 12.90 | 6.40 | 72.50 | 1.50 | 2.20 | 10.10 |
| Bonano (1913) | 8.94 | 4.08 | 3.83 | 79.59 | 0.44 | 3.12 | 24.83 |
| Dieto Barley Coffee (1914) | 3.42 | 13.19 | 9.14 | 63.87 | 7.30 | 3.08 | 17.72 |
| Minute Brew (1915) | 6.98 | 13.31 | 6.81 | 66.04 | 1.18 | 5.68 | ....* |
| Caramel Cereal (1915) | 5.04 | 16.19 | 12.60 | 58.95 | 2.29 | 4.93 | ....* |
| Monco (1915) | 5.90 | 13.75 | 7.43 | 68.96 | 1.74 | 2.22 | ....* |

*Not determined.

that it eliminated the caffeine. The present claim, however, emphasizes the removal of "coffeotoxins," among which is included caffeol).

The first three brands in this list were examined in this laboratory by Shanley in 1907, the Granger brand by the United States government, the Hanley & Kinsella brand by the Kansas Board of Health, and the remaining brands by Bailey and Shepard in the writer's laboratory during the last few months. The analyses are given in the following table, together with the analysis of a sample of commercial Java coffee as found in the Connecticut market.

| | Caffeine | Caffetannic Acid |
|---|---|---|
| Digesto | 1.11 | 9.45 |
| De-tan-ated (Puri-tan-ated) | 1.14 | 9.89 |
| Royal Dutch | 1.12 | 9.96 |
| Granger's Fairy Cup | 4.48 | 45.48 |
| Hanley & Kinsella | 0.93 | .....[1] |
| Kaffee Hag | 0.03 | 11.47 |
| G. Washington | 4.96 | 48.04 |
| Café des Invalides | 0.97 | 11.56 |
| Richelieu Vacuum Improved | 1.15 | 11.82 |
| Java (commercial) | 1.20 | 11.37 |

The writer will not attempt to discuss the physiological effects of coffee drinking, or express an opinion as to the relative harmfulness of caffeol, caffetannic acid, and caffeine. The analyses are presented here simply for the purpose of showing the amount of credence to be given the claims of the various manufacturers.

The analyses of the Digesto, De-tan-ated, and Royal Dutch coffees were made in 1907, and the writer is ignorant as to whether they are on the market at present. They are typical, however, of the "detannated" coffees. The method used by Shanley for determining caffetannic acid gave 9.51, 9.96, and 9.47 percent for Java, Mocha, and Rio, respectively, showing that the three brands in question contained quite as much tannic acid as ordinary coffee.

Granger's Fairy Cup Instant Soluble Coffee, in which "nearly all the caffeine and tannic acid is discarded," contains 4.48 and 45.48 percent, respectively, of these ingredients, or about four times as much as found in ordinary coffee.

Hanley & Kinsella's Vacuum Coffee shows only a little less caffeine than ordinary coffee.

The claim of Kaffee Hag that 95 percent of the caffeine is removed is shown to be correct, only 0.03 percent of the alkaloid being present.

G. Washington Prepared Coffee, in spite of its "refining process" which "eliminates these harmful, indigestible substances," contains 4.96 percent caffeine and 48.04 percent caffetannic acid, about four times the amounts found in commercial coffees.

Café des Invalides, claimed not to "produce nervousness or wakefulness," contains about four-fifths of the caffeine found in ordinary coffee and quite as much caffetannic acid. The reduction in caffeine is due chiefly to the presence of 20 percent of chicory and other vegetable matter.

Richelieu Vacuum Coffee shows no essential difference from ordinary coffee in its content of either caffeine or caffetannic acid. Caffeol, which the inventor of the process claims to be so toxic that even the fumes from brewing coffee cause certain people to have headache, nervous trembling, and insomnia, occurs in coffee, according to Erdmann, to the extent of only 0.056 percent. A cup of coffee, made from 5 grams of pulverized coffee, would contain only from 0.0007 to 0.0010 gram of this poison, so that, if the inventor's statements are to be believed, coffee contains a poison equal to strychnine for deadliness. This claim as to the poisonous effect of caffeol is a talking point rather than a statement of scientific fact. The Evers process originally claimed to remove the caffeine, a claim which our analysis totally disproves.

[1]Not determined.

### Chicago Roof Tanks Under Investigation

The Department of Health of Chicago has recently completed an investigation of the roof tanks used in furnishing domestic water in that city, and some rather impressive discoveries were made.

In a certain district the water supply was threatened by a pollution which occurred at the Sixty-eighth street pumping station. In this connection it was suggested that many of the roof tanks had not been cleaned, some of them for years, and that these might still continue to be a source of danger. It was, therefore, determined to make a careful examination of all roof tanks in that district and order that all tanks be emptied and thoroughly cleaned.

In carrying out this work the district was divided into eighty-eight sub-districts, each one-half mile square. Forty-five of these districts were found to be without tanks. In the other thirty-three districts there were 374 tanks examined and cleaned. The canvass was made by a cooperative effort on the part of the Department of Health and the Water Pipe Extension Bureau; there being 21 inspectors from the Water Pipe Extension Bureau, who put in a total of 120 days' time; 14 food inspectors, 39 days; and 49 sanitary inspectors, with a total of 59 days, making a grand total of 220 days' time spent by all of the departments in the canvas.

In some of the roof tanks there were four or five inches of sediment, soot, sand, and an indiscriminate mass of filth. Some of the contents were long since beyond the putrefactive stage, but bore evidences of having once been solid matter in small particles. The Department of Health is to continue the tank inspections until the whole city is covered.

Dr. S. W. Pryor, Chester, S. C., is arranging to rebuild his private hospital, which was burned March 20. The new building will be a modern, fireproof structure costing about $40,000 and having a capacity of 25 beds.

The Cipes Sanatorium, Albuquerque, N. M., is being enlarged by the erection of a ten-room addition.

# ARCHITECTURE OF A. D. PRICE MEMORIAL HOSPITAL, HARRODSBURG, KY.

## A New Fifteen-Bed Hospital of Remarkably Low Cost and Capable of Almost Indefinite Enlargement—Flexibility of First Floor Arrangement to Permit Varied Use —Some of the Figures of Cost

By H. E. HANNAFORD, of Samuel Hannaford & Sons, Architects, Cincinnati, Ohio

THE A. D. Price Memorial Hospital is a privately owned institution, maintained and operated for the benefit of the sick of Harrodsburg and Mercer county. It has been realized for the past two years that the present hospital was entirely too small to accommodate the necessary number of patients. The ladies of Harrodsburg, seeing this need, therefore organized a hospital board and began an agitation for a new institution that would be modern in its structure and equipment, and efficient in its organization and management. They were untiring in their efforts to give to the city of Harrodsburg an institution of the highest class possible.

The building of the new hospital was placed in the hands of a building committee appointed by Mrs. Lafon Riker, president of the hospital board, and which consists of Mrs. D. Praigg Van Arsdall, chairman; Mrs. Warren Allen, Mr. James L. Isenberg, Mr. Bush W. Allen, Mrs. Frank P. McGarvey, secretary. Samuel Hannaford & Sons, of Cincinnati, were the architects and Cal. F. Thomas & Co., of Louisville, the contractors.

Fig. 1. A. D. Price Memorial Hospital.

The site for the new building is in the western part of the city on an elevated plot of ground, with beautiful trees and shrubbery in the rear. The building has been planned in a way to take care of future expansion. The exterior is very simple and plain, and clearly indicates its purpose. Good construction has been employed throughout. The foundation is of Kentucky limestone, thoroughly waterproofed, so that the basement is absolutely dry.

The exterior walls are finished with pure white "Stonekote" placed on metal lath. The roof is covered with a Washington red cedar shingle stained a light green. The details of the interior finish have been carefully studied, and everything has been done to make the building as cleanable and as nearly aseptic as possible. The floors throughout, except operating room, are rift-sawed yellow pine. The operating room floor is a nonabsorbent tile floor. The plumbing fixtures are all of special hospital design. Heating is furnished by means of the latest type of hot water system. Direct radiation is used in each room.

In the basement is located the boiler room, coal storage room, and laundry. The floors in basement are constructed of concrete. The first floor is taken up with office, examination room, two nurses' bed rooms, superintendent's bed room (which could be used as a general ward in an emergency), kitchen, dining room, isolation ward, colored ward, and bath and toilet rooms.

The central corridor contains the stairs leading to the second floor. On the second floor, in the center of the building, is located the operating room. This room is provided with steel sash in order to secure as much light as possible. The latest type of sink and surgeon's lavatory are provided, with knee-action valve. Directly over the operating table there is a 330-watt operating lamp fixture.

There are five private wards on the second floor and two general wards, with three beds each for male and female. There is also provided in connection with the operating room an anesthesia and recovery room. These two rooms can be used as private wards in emergency cases. There are also on the second floor two bath and toilet rooms and the necessary linen closets.

The entire building is provided with intercommunicating telephones, bells, and signal system. Elevator and dumbwaiter are also installed.

There are many features of construction and equipment worthy of notice that cannot be described in an article as brief as this, such as little conveniences in the arrangement of the kitchens, location of help's toilet in the basement, hinged porch rails to facilitate handling of incoming sick and outgoing dead, special wall plugs for individual beds, etc.

It would undoubtedly have been much better to

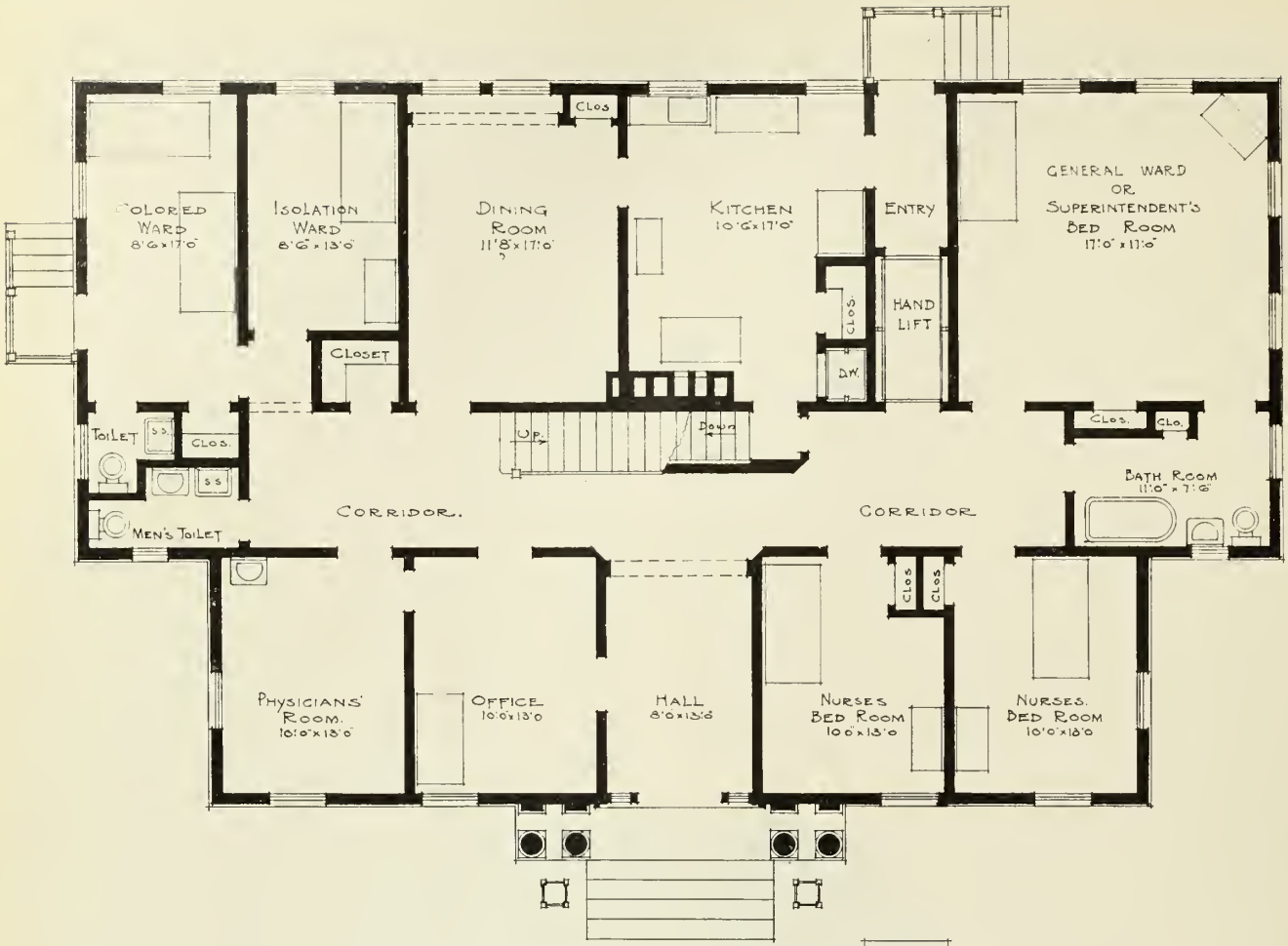


Fig. 2. A. D. Price Memorial Hospital. First floor plan.

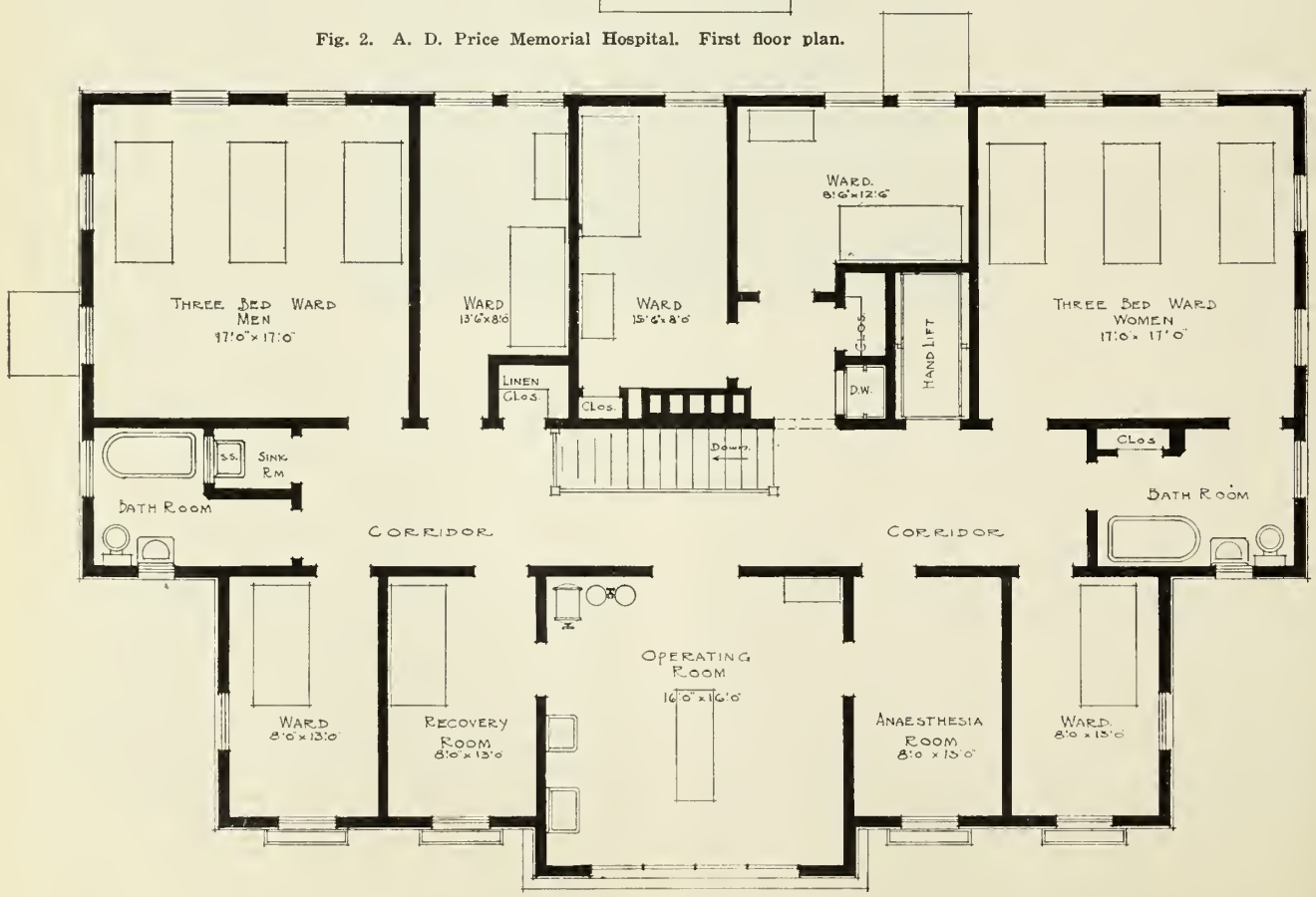


Fig. 3. A. D. Price Memorial Hospital. Second floor plan.

carry the corridors through instead of placing obstructing walls across them, but it would also have increased the size and consequently the cost of the building.

The low cost of this little hospital was possible for three reasons: (1) we used quite a lot of old material resulting from the demolition of an old residence that was on the property; (2) labor in Harrodsburg is at least 33 percent cheaper than in the larger cities; (3) our contractor took this work simply as a "pot boiler," to hold his organization over what promised to be a very dull season.

COST DATA

Building contains 81,906 cubic feet. Hospital contains 17 beds, 2 nurses' bed rooms, and superintendent's bed room.

| | |
|---|---|
| Total cost of building complete | $11,360.00 |
| Or 14 cents per cubic foot. | |
| Cost of building complete without hot water heating system | 10,190.00 |
| Or 12½ cents per cubic foot. | |
| Cost of electric fixtures | 116.00 |
| Cost of hospital per bed, approximately | 675.00 |

## THE INTERN'S SIDE OF HOSPITAL SERVICE

### Young Medical Men Will Respond if Their Interests Are Looked After—Trustees, Superintendents, and Medical Staffs Fail in Their Duty to Interns—Only Medical School Faculties to Be Counted On to Remedy Defects in Present System

By G. K. DICKINSON, M. D., Jersey City, N. J.

OF the several departments into which a hospital may be divided, the one of the internship is the last to receive attention. History repeats itself in the hospital, as the professional man is the last to be considered. No hospital is complete without interns sufficient to satisfy all the demands of a busy institution.

Even the patients who come to a hospital for a length of time do not fully comprehend the tremendous demands that are made on these young interns, who come poorly equipped mentally and professionally for the broad, generous work they are called on to give—prompt, efficient, and sympathetic attentions to patients when they arrive, to those distressed either from disease, injury, or the work of the surgeon; with the attending physicians and patients from morning until night; doing the work delegated to them by the superintendent; in the dispensary when needed; assisting in the operating room; doing the varied detail work of the laboratory; called out of bed many times during the night; then perhaps scolded because late for breakfast, and sometimes obliged to go without it.

The intern has been the under dog in the institution's struggles for many years. The average young man comes to the hospital a stranger—not only to it, but to the town and the neighborhood. He is more than desirous to make good for himself as well as for the place. He is young and crude, perhaps, in thought, and has not as yet learned system. He needs sympathy and cooperation. He needs the assistance and guidance of those older and better experienced in this duplex work of professional care and businesslike way of conducting his department.

The intern comes but for a year or so. The staff, superintendent, and others are there for a long and definite time. He is a stranger—they are at home. He is acquiring the last and most important part of his education, while they are making their living and doing that which is routine.

Too often there are those who do not comprehend the intern's position—his psychology, his varied nature, and yet his single purpose of obtaining information, of rendering practical the theories and ideals instilled into him at college, his great desire to be doing something for those who are sick and at the same time to please, if possible, the hospital family.

Every physician, every man, and every woman knows that he gets just what he gives. If a man sows little, he reaps little. A person of affability and genial disposition, who loves to instruct and train, whose whole nature goes out in cooperation and cohesion, will have in return a better product of work—more untiring, energetic attention and heartier cooperation than one who is testy, imperative, and demands rather than commands.

How many hospitals are there that seem to look on the intern as a stranger, as a necessary nuisance, as one on whom they can play detective, whose every variation from rule and regulation means a threat to reprimand, to be called before headquarters and severely disciplined! Such a condition can never make for a good institution. It will pollute the atmosphere of the place, and, as those in power have the word, the poor intern suffers. They have friends in town—he has none. He has no place to go for backing, friendship, and fair treatment. Such has been eminently the case in the past and is somewhat so in the present.

Up until 1890 doctors were made in two years, a third year being added at that time. With this change began a change in the public's mind

toward medical practice. Increase in education meant a distinction between those who guessed and those who thought. About that time the larger number of young men, following the impulse of educational thought, sought out the hospitals, and the institutions, when they held their examinations, found abundant material and often had a waiting list.

But college requirements and the laws of the legislators are having a pronounced effect on medical education. The average young man today is 25 years of age before he starts to earn a penny. His parents must finance him during a long educational period. One or more years of cultural education in a college, four years in a medical school, and one or more years in a hospital mean a tremendous outlay of money in order to make him a physician.

The climax of his education is to be obtained in the hospital. If we understand the times aright, each hospital accepting an intern will be obligated in a sense to the college that delivers him. Each hospital, of a necessity, must become a larger and more complete educational institution. The young man on whom so much money has been spent, who has reached the age of 25 or 27 years, who is educated and to a large extent refined, must be received and treated in the hospital in a far different spirit than has been afforded him in the past. He will expect and must obtain greater deference. He must be instructed in system and in methods of observation, so that the greatest good for the institution and for himself may be accomplished.

The professional staff will needs link themselves in one active body, who shall not, as often has happened, walk in to the bedside and walk out again, but shall interest themselves also in the hospital as a medical college and see that all departments—medical, surgical, and laboratory—warmly sympathize with the young student, and, instead of looking for his faults, act as all charity would demand—that none has faults.

In the majority of the hospitals within fifty miles of New York city, and probably in a majority of those throughout the states, the intern soon finds that he is little better than a high-class orderly. Rules and regulations for conduct are printed for him, but just how he is to do his work, how he can be on the ambulance and in the laboratory at the same time, and still be ready to administer ether, are not explained, nor is he given to understand, where there are several interns in the institution, the proper way of distributing the work to be done in case of illness or absence of one of the body. Seldom is there a helping hand from the administration or the attending staff. The young man is expected to have an old man's head —never to make a break, or, if he does, to be able to cover it over and not be found out.

In other institutions where there is much red tape, where there are those who desire and demand elaborate histories and condensation of bedside notes, the intern becomes a clerk. To make a proper physical examination and take good history requires of the best practitioner not less than half an hour. With several new cases and with the general run of ward work and side calls, the intern clerk will necessarily become embarrassed. The honest man who finishes his day's work has often been known to sit up until midnight scribbling away on that which is rarely, if ever, referred to. All of this puts him in the same class with the nurse, who is often made a cheap convenience for the institution.

If there is to be a proper awakening, if the intern is to receive his dues, then both sides of the question must be thoroughly comprehended. Perhaps because something for nothing cannot be obtained in this life, and perhaps because the hospital authorities felt they were securing from the intern that for which they did not have to pay, made them lose regard for him. Consequently the first obligation due to the intern staff should be a substantial honorarium or salary. This would make the young man feel independent of his parents, give dignity to his position, and at the same time give the board of managers a better grip on him, holding him to his duties.

There should be some one in authority whose business it shall be to orient the intern, explain to him his place, his work, the essentials of cooperation, how to spread it out so that the maximum amount of work may be obtained in the minimum amount of time, and how to arrange it between the different members of the intern staff, so that one man will not be crowded and the others have too much leisure.

The members of the attending staff have a moral obligation to the intern. They should, as far as possible, attend promptly at a fairly regular time. One or more of the intern staff should accompany them on every round. It should be obligatory for the attending men to train them in physical diagnosis; their powers of observation should be developed, the value of symptoms discussed, and everything which pertains to the individual as well as to the lesion brought out, exploited, and studied. Each patient should become a clinic; and, although the fifth year is one where the five senses are actively employed, still endeavor should be made to develop in these young students an ethical standard, a spirit of humanitarianism, and broad, noble, high-minded ideals—in other words, a practitioner properly developed

for the bedside, home life, and association with fellow-practitioners.

To the public mind medicine is boiled down into treatment. To the professional the study of the body in health and in disease, the reasons for symptoms, and the fundamentals of preventive medicine are the more important, and in the hospital schooling one should endeavor not only to teach pharmacology, but also medicine and its metaphysics.

On the other side, the intern is obligated to the patients, to the visiting staffmen, and to the nurses, as well as to the board of managers. Show a man respect and he will respond. When the intern finds that he is obtaining the treatment every man who respects himself should receive, there will be a new attitude discovered among this staff of men.

New cases should receive more prompt attention. Courtesy, kindliness, and personal interest will not only warm the patient toward the institution, but also relieve him of that fearful dread which everybody possesses on entering a hospital.

Rounds should be made slowly, carefully, and thoroughly at a specified time each day; the patient's complaints should be listened to and carefully weighed; mental and therapeutical treatment administered; and each and all made to feel that there is a personal interest in them, in their convalescence, and in their worries over home affairs and possibly depleted income.

Perhaps there is no stronger educative factor in the hospital than the making and taking of a history, provided the same be conscientiously gone over by the attending staff and studied as carefully as the patient is studied, and points of medicine, matters which are superfluous, incomplete observations and irrelevancies all discussed. Each history should be made to show everything which might be discovered in operation or autopsy. If time, attention, and interest be given to the histories, no one will ever have occasion to complain of the intern neglecting them.

It should be the duty of the intern, as soon as he has worked into his case, to decide as to what laboratory tests should be made—whether chemical, blood, bacteriological, or x-ray—and everything should be done to unravel these enigmas before the next visit of the attending physician.

This article may seem pessimistic to many, particularly to those who are connected with the metropolitan hospitals, but the writer feels keenly the predicament of the intern in the average hospital in the communities he has visited. The experience of many years in hospital life, meeting with several hundreds of interns, hearing their complaints, and the knowledge of the incompleteness of their education, have led him to express himself in all truthfulness, even though the picture be dark and perhaps unpleasant.

There must be a cure, and there is a cure. It will never come from the boards of managers; it will never come from the superintendents, nor from the professional staffs. The solution and moral obligation will rest with the faculties of the various medical colleges. If the colleges do not band together and work in the interest of the interns, demanding standardization of hospitals—demanding that the education of the intern be made a strong point, and demanding that due respect be shown him—the fifth year will be a failure and the Legislatures of the different states will endeavor in some way to effect reforms, and then will be confusion worse confounded.

## 1500 B. C. TO 1915 A. D.

### Such Is the Stretch of Time Over Which Ligatures Have Traveled to Present-Day Perfection

The ligature had to travel a long road before it was established as the best and surest means of checking hemorrhage. The first account of the application of the ligature for this purpose is given by Susrutas in his Ayar Vedas (1500 B. C.). He tied the umbilical cord of the newly born infant with a string eight inches from the navel previous to cutting it. (Senn.)

Celsus (30 B. C.–45 A. D.) applied two ligatures to the bleeding vessel and divided it between them. When he could not ligate in these cases, he advocated the use of the cautery.

Aetius (500–550 A. D.) ligated for aneurysm, excising the sac, although he used a red-hot iron to stop bleeding in excision of the breast.

Kirkland (1721–1798 A. D.) asserted that "nothing can more powerfully intersect the course of the blood than a ligature." He advised the use of the ligature made of long "twelve-penny flax," with the ends waxed so that it would pass through the eye of the needle.

Sharpe, a surgeon of Guy's Hospital, in London, suggested the use of the ligature in 1761.

In the early use of the ligature, suppuration was considered necessary in order to facilitate its removal, for which purpose both ends were brought out of the wound. Later, some surgeons cut off the ligature close to the knot, but it was discovered that the ligature, after performing its duty, created an irritation and led to the development of an abscess.

In 1889 Agnew stated that "the knots, not being aseptic, act as irritants, retard healing, provoke abscesses, and are subsequently discharged from the wound. So the plan of cutting both ends of the ligature close to the knot may be regarded as an unsurgical procedure."

Philip S. Physick (1768–1837) was one of the early users of animal sutures. He used dog-skin and chamois cut into strips.

Sir Joseph Lister introduced the antiseptic or aseptic ligature. Since his day the same kind of violin string gut has been subjected to over one hundred different methods of sterilization in the hands of different experimenters and operators. Experimenters for years struggled with the problem of sterilizing catgut and keeping it sterile, and with few exceptions failed.—Red Cross Notes.

## A RESIDENCE MADE OVER INTO A GOOD HOSPITAL

### Three Rivers (Mich.) Institution That Cost a Small Amount for Architectural Changes—With Ideals and Economies Proving Successful

By JAMES R. KINGSLEY, M. D., Three Rivers, Mich.

CONSIDERING the vast amount of improvement that is being constantly made in hospital construction and organization and management, it would seem that almost any doctor anywhere could find hospital facilities that just suited his clinical needs. This seems not to be the case, however, because we have been hearing for years of the dissatisfaction of doctors in various parts of the country with their hospital facilities. That same thing was true here in Three Rivers, and without burdening the reader with a long story about our various attempts to do good hospital work with other people's facilities and in hospitals over which other people had control, I shall try to tell why we determined to create our own hospital, and for the benefit of the readers of THE MODERN HOSPITAL we are presenting the modest story and the illustrations of our hospital as it stands at the present time.

Fig. 1. Three Rivers Hospital.

First we bought a very fine, handsome old residence with three stories and basement. There were two acres of ground, with a frontage of 189 feet and a depth of 515 feet. The nearest house to our hospital is 125 feet away. In the grounds we have plenty of fruit, room for a large garden, old maple and pine trees about the lawn, with the possibilities of very beautiful landscape effects.

The illustrations show the changes that we made in the residence. In the basement we divided the large former store room and cut a morgue off of it; two unused rooms we changed over for vege-

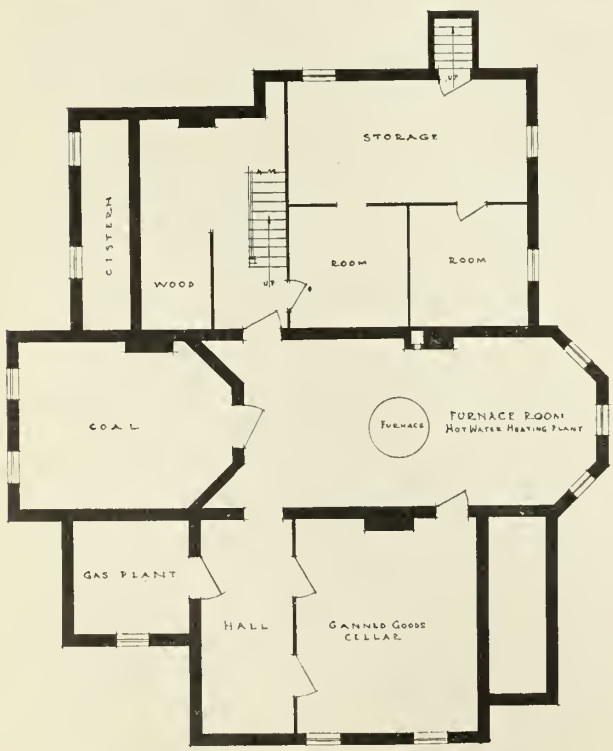


Fig. 2. Three Rivers Hospital. Basement plan as it was.

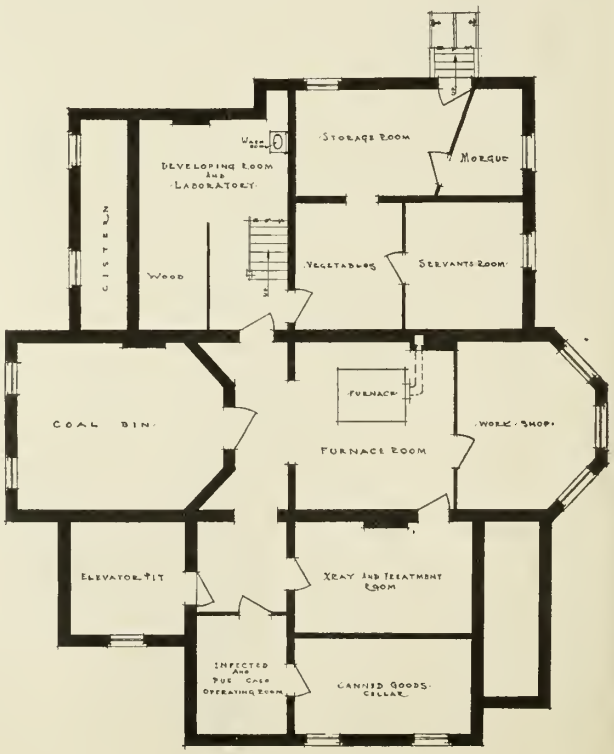


Fig. 3. Three Rivers Hospital. Basement plan with alterations.

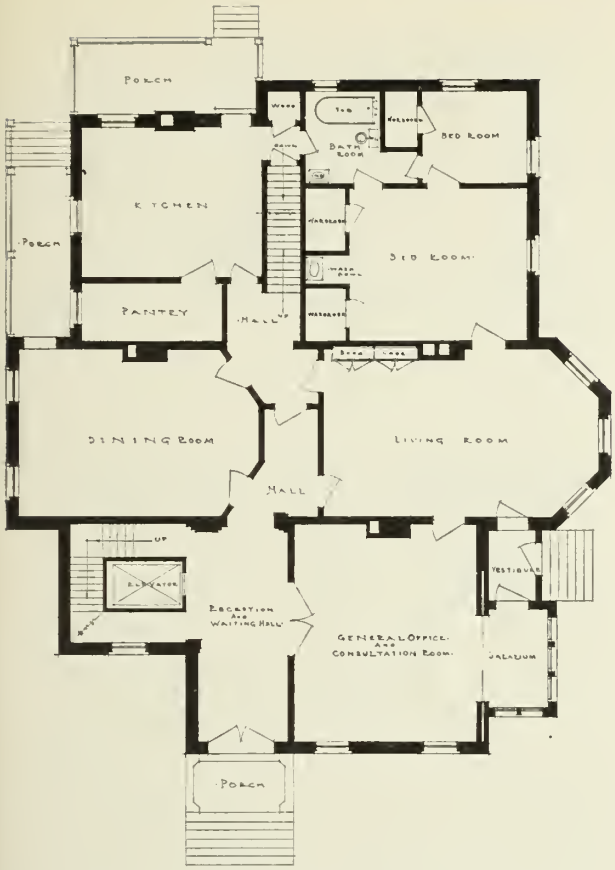


Fig. 4. Three Rivers Hospital. First floor plan—no alterations made.

table storage and a servant's room; a developing and dark room and a laboratory were made out of practically unused space. The large furnace room of the old residence, under the new arrangement, gave place also for a very commodious and conveniently arranged workshop. A cool room for canned goods and commodities of that sort was divided up, with one-half of it left for canned goods and similar bulk commodities, and the other half was taken for an x-ray and treatment room. A long hall was divided up and one-half of it taken for an emergency operating room. The area for the gas plant was just the right size for the elevator shaft.

No changes were made in the first floor, excepting that the beautiful circular stairway was torn out to make way for the elevator, and we put in a combination electric and hand elevator.

In the second floor the large, beautiful private rooms, seven in number, were made over into three wards—a men's ward of five beds, a women's ward of five beds, a maternity ward of five beds and four private rooms. The former bath room was just right for a bath and toilet in the new arrangement. We kept the back stair and added the elevator.

The third floor, that had been a gymnasium and billiard room, with the balance of the space set aside for storage, gave us plenty of room for our nurses, with necessary bath and toilet and closet arrangements, and also gave us a most satisfactory operating suite, still leaving a large unfinished area which we can later use for other purposes.

In the halls, dining room, pantries, kitchen, and bath rooms we put asbestone flooring, which makes mighty nice floors for hospital purposes. In the bed rooms and baths we have lavatories of black walnut, with porcelain bowl and marble top.

Such were the architectural changes necessary in this former residence to make of it what we

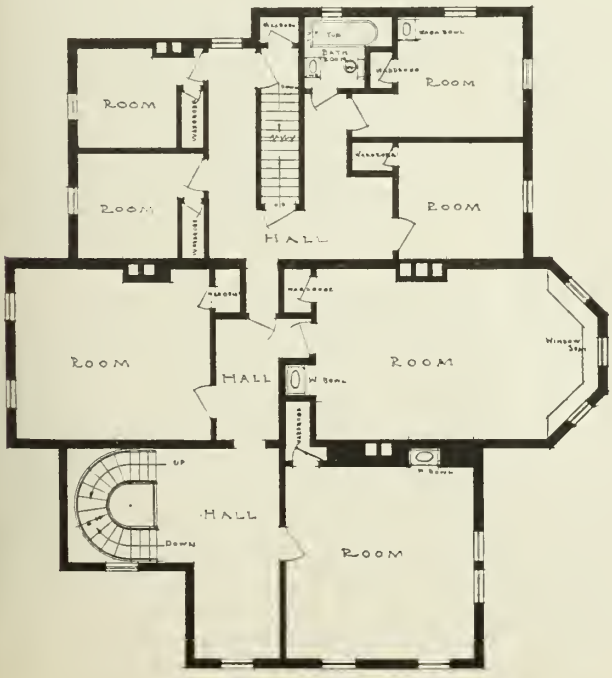


Fig. 5. Three Rivers Hospital. Second floor plan as it was.

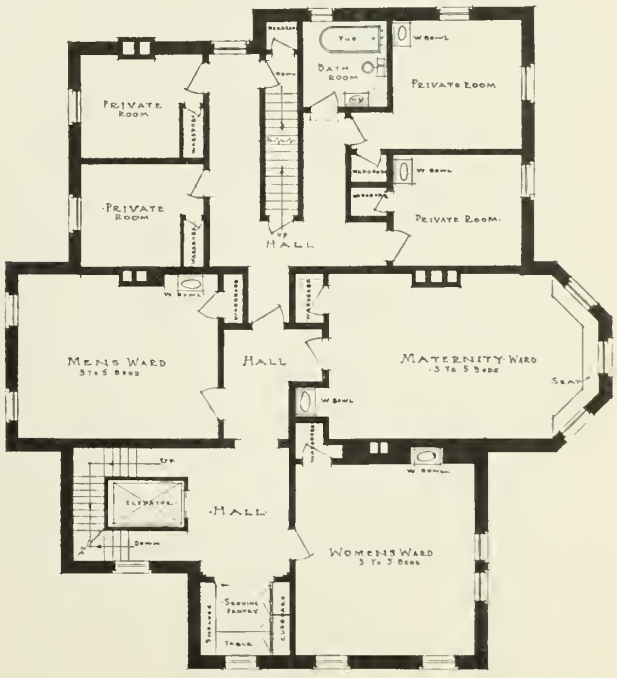


Fig. 6. Three Rivers Hospital. Second floor plan with alterations.

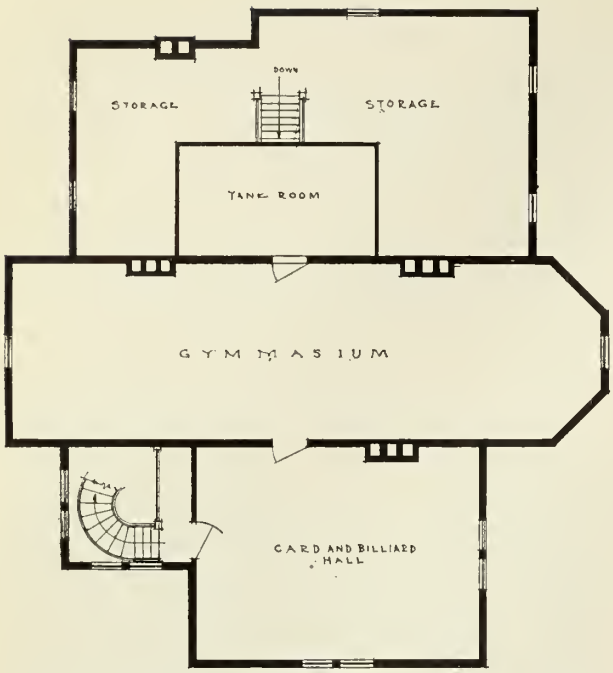


Fig. 7. Three Rivers Hospital. Third floor plan as it was.

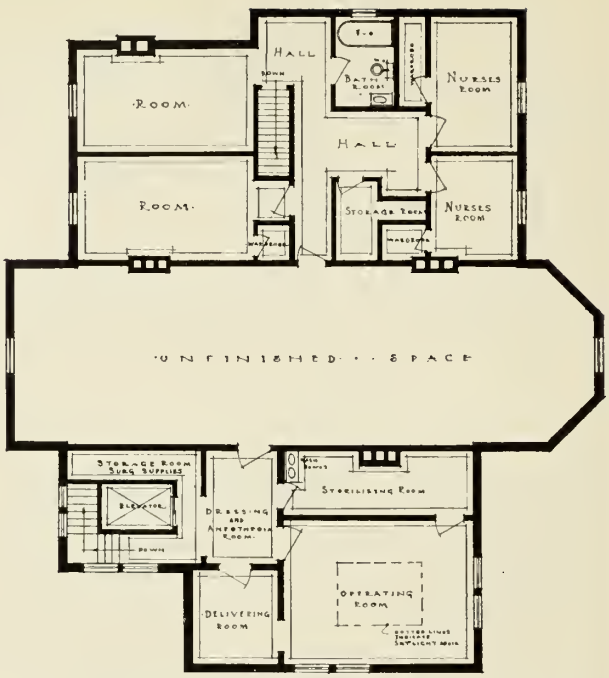


Fig. 8. Three Rivers Hospital. Third floor plan with alterations.

think is a most satisfactory little hospital. We have had a large number of visitors from out of town, men and women who have seen the best there is in hospital construction, and they tell us that our operating room suite is a gem of its kind and that its arrangement provides a most convenient and up-to-date and aseptic operating theater; and that our x-ray department and the work we are doing in our laboratory are quite efficient even in this modern day of high-class hospital administration.

We did not ask the public of our community to indorse the project of our hospital; we took it for granted, if we created something that our public wanted, that professional men and laymen would patronize it and use it. We have found that to be the case, and there is no longer doubt about the success of our undertaking. Although we own the hospital in its entirety, my wife and myself, it is open freely for the reputable physicians of our community to bring their private patients, and they have all the facilities of the hospital placed at their disposal and are entirely free to do their medical and surgical work in their own way and without interference on our part.

One of the secrets of our success financially is in not burdening the hospital with a large number of permanent employees, especially nurses. We keep constantly a head nurse, or superintendent, who does the work that in larger hospitals requires a number of women, and we keep also a surgical nurse, who has entire control over the surgical work in the hospital. All additional nursing is brought from the outside and when needed. We have access to the best nurses in our community, and they are always glad to be of service to us and come when they are called. In this way we do not have a large overhead expense. The same thing is true in other departments of the hospital. We do not keep a burdensome number of employees, and the result is that our finances are conserved and we are enabled to have the things that stand for good hospital administration, good materials, good equipment, and good service.

### Compulsory Registration of Professional Nurses Becomes Law in Maryland

The amendment of the Nurse Practice Act of 1904, presented by the Maryland State Association of Graduate Nurses at the recent session of the local Legislature, has been passed on favorably, and, according to the provisions of the bill, will be enforced after June, 1917. In brief, the changes instituted are as follows:

1. To authorize the appointment of a registered nurse to act as visitor and inspector of training schools for nurses throughout the state.

2. To increase the fee for registration from $5 to $10, to meet the increased expense in administering this law.

3. To lower the age for registration from 23 to 22 years.

4. To make the registration of women professionally trained as nurses a compulsory rather than, as formerly, a permissive ruling.

5. To provide for reciprocity of registration with the forty-two states now enforcing registration laws. Owing to the existing discrepancy of educational requirements in these various states, this reciprocity is based on the qualification of the individual nurse. To such applicants as fulfill the requirements of the Maryland law, and are duly registered under the laws of another state, shall be issued certificates of registration without examination.

By the enactment of these amendments, together with the previous requirements of the equivalent of a high school education and three years of hospital training, the Maryland law becomes one of the strongest on the statute books. We most heartily congratulate the Maryland State Nurses' Association on this most progressive step in the advancement of nursing standards.

## MUNICIPAL CLINICS FOR SCHOOL CHILDREN

### Demand and Supply Curves on Pupils' Status Must Be Correlated to Obtain Best Results

Recently a statement was made on absolutely reliable authority that the cost of reeducating the retarded children of the city of New York amounts annually to more than the total appropriation for the municipal health department. It seems almost incredible, but a close scrutiny of the statistics of physical defects found among school children prompts one to give full credence to the statement. There are, no doubt, many factors besides physical defects which are responsible for the large amount of retardation in the schools of this city, but one cannot escape the conclusion that the educability of children is materially affected by physical handicaps which, in a considerable percentage of cases, are not relieved after they have been discovered.

Aside from carious teeth, hypertrophied tonsils and defective nasal breathing constitute the largest number of ailments ascertained by medical inspection. Jointly they are responsible for about 30 percent of all the defectives found among school children in 1915, and the two defects are coincident in over 80 percent of the cases. An effective remedy for over 95 percent of these conditions can be supplied only by operations. It is the unanimous opinion of the highest authority in the medical profession that these operations require hospital facilities, and should not be attempted except under general anesthesia. Aside from the fact that not very many institutions have sufficient facilities to handle a large number of adenoid and tonsil cases in a manner conforming to the highest standards, the cost of such operation entails a considerable cost to the patient or his parents or guardians. A large number of the children suffering from these defects cannot afford to meet the expenses involved, and are dependent on medical charity. As a result, their ailments are either not treated at all or are treated inadequately.

The experience of the health department of this city, which until the beginning of the present year conducted a number of nose and throat clinics, proved conclusively the paramount need of such institutions. The following statistics for the last three years show the increasing percentage of deserving cases which took advantage of the health department clinics:

| | 1913 | 1914 | First nine months, 1915 |
|---|---|---|---|
| Number of operations of defective nasal breathing in school children. | 6,859 | 8,446 | 7,210 |
| Number of operations of hypertrophied tonsils in school children.... | 8,383 | 10,124 | 8,494 |
| Total number of operations..... | 15,242 | 18,570 | 15,704 |
| Number of operations performed in clinics of the department of health. | 3,889 | 5,310 | 4,891 |
| Percent of totals.....25 percent | | 29 percent | 31 percent |

A study recently made by the New York Association for Improving the Condition of the Poor[1] shows that two-thirds of the children treated in the health department clinics came from within a two-mile zone in order to receive treatment, and many came four or five miles to get the treatment. Reasons of economy, however, have led the health department to abandon their clinics to the great detriment of the physical, as well as the scholarly, progress of the school population. Many conclusive studies have been made to show the relation of the incidence of physical defects to backwardness. Very frequently laggards become normal students as soon as their defects are corrected. The whole object in medical inspection work should be the remedy of the defects noted, for otherwise it is a senseless procedure. Although, through the persistent efforts of the school doctors and nurses, the percentage of treatments is increasing, still it is far below what it should be. The reasons for it are well known; ignorance and poverty, which usually, though not always, go together, are the chief causes. By education the first difficulty can be met, but no amount of literature will meet conditions arising out of poverty. To deal effectively with this class of children and their parents, it is necessary to provide gratuitous and efficient treatment. A study made by the author of this paper[1] some time ago with reference to the subject revealed the imperative need of providing free municipal clinics for school children. The discontinuance of these clinics on the part of the department of health of this city was unquestionably a backward step, as the modern tendency in school work is the closer correlation of the demand and supply curves of the students.

E. H. Lewinski-Corwin.

[1]Free Municipal Clinics for School Children, published by the Department of Health of the city of New York, Reprint Series No. 41, February, 1916.

[1]E. H. Lewinski-Corwin, "The Practical Necessity of School Clinics." The Popular Science Monthly, May, 1914.

## NEW YORK'S POST-GRADUATE CLINICS

### Organization in the Academy Maintains Bureau of Information to Welcome and Guide Visitors

The Society for the Advancement of Clinical Study has now been established at the New York Academy of Medicine, 17 West Forty-third street, for the past three years. In January, 1913, a small group of surgeons felt that medical men visiting the city in search of clinical and post-graduate work could make more advantageous use of their time if regular daily bulletins were issued of the operations and clinics held at the various hospitals in New York. The society was formed with this end in view—to make available to these visitors the vast clinical material in New York, thus helping to make the city the real medical center of the United States.

The city of New York is the best equipped of any city in the United States as to hospitals and clinical material. There are more than sixty hospitals in Greater New York that are reporting their operations and welcoming visitors from all parts of this country and Europe.

A bulletin board is maintained for this purpose, and a bureau of information is in charge of an attendant, who is on duty from 9 to 12 in the morning and from 2 to 6 in the afternoon, to give such information as the visitor may desire. The telephone for this office is 3375 Bryant.

The clinics held at the various hospitals are posted on the daily bulletin and sent to visitors for 50 cents per week. The bulletin board also contains a list of the daily fixed clinics, as well as those at the appointed hours at the hospitals.

The success of the Society for the Advancement of Clinical Study has been demonstrated by the ever-increasing number of visitors and inquirers who make use of these clinical facilities, and it is hoped that by these means the large and unexcelled opportunities for medical research and post-graduate work afforded by our city will be made more accessible to those who may desire to make use of them.

It is the earnest desire of the members, not only to increase the work by the addition of medical clinics and post-mortem examinations, but to bring about the active cooperation of all the hospitals and the attending physicians and surgeons, so that visitors to the city will find still greater opportunity for close study of the vast amount of clinical work in Greater New York.

The MODERN HOSPITAL

Editorial Office . . . 6 North Michigan Ave., Chicago
Business Office . . . Metropolitan Building, St. Louis

EDITORS.

Henry M. Hurd . . . . . Fidelity Building, Baltimore
Frederic A. Washburn . Mass. General Hospital, Boston
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## Doctor Hoffman Makes Another Report

In other pages of this issue will be found the statistical annual report of the Orange Memorial Hospital prepared by Dr. Frederick L. Hoffman, statistician of the Prudential Life Insurance Company. It will be remembered that last year Dr. Hoffman compiled a report for the General Memorial Hospital of New York city, and the year before a most elaborate report for Johns Hopkins. These reports of Dr. Hoffman's we regard as among the most important activities in the hospital field today, and they should be studied carefully by those responsible for annual reports in the hospitals of the country. We all know that most of our annual reports are practically worthless. THE MODERN HOSPITAL has had something to say about this frequently, and perhaps Dr. Hoffman has known better than any of the rest of us, because of the peculiarly sensitive atmosphere of the insurance corporation, and he has been giving us these reports—not as other reports are usually made, but he has had forces of men studying the hospital during the year and seeing that the data have been kept in accordance with his own judgment as to what was necessary in order to make a proper showing at the end of the year.

The time is coming, and it is almost at hand, when states, counties, and cities and the giving public will require an account of stewardship from the hospitals that they favor with their donations and support, and it is quite inside the facts to declare that not one hospital in a hundred in this country keeps its accounts, its records, and its financial figures in such shape that an intelligent inquirer could know what that hospital is doing at any time.

Responsible people will not permit this situation to exist very much longer, and those hospitals that value individual and official support will do well to analyze and study and attempt to follow the forms laid down by Dr. Hoffman in these annual reports that he is making for us.

## Small Community Hospitals

One of the most insistent problems of the public health of this country today concerns the number and location of hospitals. Up to within the past year or two the writer of this editorial believed that any hospital which was not financially equipped to perform its functions according to the dictates of modern medicine ought to be closed and its work turned over to another institution capable of performing the duty properly; in other words, that the hospital which could not install a good laboratory of pathology, a good x-ray outfit, and the mechanical appliances for physical therapy, and whose building was not properly constructed with a view to proper ventilation and sanitation, should not be permitted to mask as a hospital, and that more especially a hospital which could not pay salaries for competent directors in the scientific departments of pathology, roentgenology, physical therapy, and dietetics ought not to be permitted to exist.

For the past year or two we have been wondering whether this position is a broad and liberal one, and we are now almost converted to the idea that every community in this country of any considerable number of people ought to have a hospital of some sort, even if that hospital cannot be equipped to give service along modern scientific lines.

We are coming rapidly to the conviction that even a poorly equipped hospital, with ideals behind it, which cost nothing in the shape of money, can give a better service to the sick than many patients can get in their own homes, and we are rapidly coming to the opinion that, even if the hospital failed completely in its duty so far as the care of patients was concerned, it would still be serving a very large purpose in the community if only it stimulated the activities of the medical profession of the community by giving the members a workshop in which to practice their profession

and thus acquire experience. It seems almost inconceivable, with the great number of hospitals in this country, and with the rapid means of transportation everywhere, that a patient could be taken suddenly sick with some emergency trouble and not be able to get to a hospital in time to save his or her life in the event that an operation was necessary; and yet there are many just such places where the hospital is fifty or sixty miles away and where the trains run so irregularly that it is impossible to count on railroad transportation, and where the roads are so bad that automobile and ambulance transportation cannot be made available. What is to happen to people who fall sick under these circumstances? Are they to lie at home and die? We think not, and we think the cure is to build small, conveniently arranged hospitals, equip them in the very best possible way that the community can afford, and thus give a workshop to the doctors of the community, so that when an emergency case does transpire they will be able to take care of it.

Moreover, we believe that in every locality where such a hospital is organized and built, and where it is properly conducted, economically and efficiently and very simply, that the people of the community will soon realize its value as a public health center and as a workshop for their doctors, and that they will eventually support it and support it loyally and abundantly.

We are wondering whether we hadn't better think about this principle of small community hospitals.

### The Death of Doctor Sachs

Dr. Theodore B. Sachs, of Chicago, for a number of years known internationally for his service in the field of tuberculosis, died by his own hand at Naperville in the Edward Sanatorium, of which he was president, on Sunday, April 2. Evidently Dr. Sachs had labored under very great mental stress due to disagreement between himself and the administration of Mayor William Hale Thompson as to the conduct of the municipal tuberculosis sanatorium. Dr. Sachs had been president of that institution for years, and had been one of the three members of its board of trustees since the inception of the sanatorium project five or six years ago. He had resigned his place as president of the board a few days prior to his death, due to strictures on his management made by the mayor, and his resignation was evidently the culmination of a long series of disagreements.

We have no disposition to go into the merits of the controversy between those who favor and those who are opposed to the methods of the present administration in the management of the municipal sanatorium, but there can be only one conclusion in regard to Dr. Sachs' untimely death —namely, that it was deplorable and tragic, and that his loss will be felt in the field of tuberculosis for many years to come.

Dr. Sachs came to this country when a boy and began as a common laborer, working at odd jobs. He was a serious-minded, sincere boy, to whom fate had not been kind, and there is no doubt that very early in his career he had determined to devote his life to the service of others. Under heavy handicaps he had studied medicine, and under still greater impediments he had forged his way to the front in his profession until he occupied a most eminent position, where his service was telling most profoundly, especially in that stratum in society most heavily taxed by the great white plague. Perhaps unfortunately Dr. Sachs seemed to carry the weight of his responsibility so far that he sometimes was intolerant of the opinions of others, and there is no doubt that this peculiar characteristic of his was responsible for his untimely end. THE MODERN HOSPITAL has, or at least some of its editors have, questioned sometimes the wisdom of some of Dr. Sachs' methods, or, perhaps it had better be said, some of the methods of his more enthusiastic friends.

There are five institutions for the care of tuberculosis to which those ill with that disease in Chicago may be sent—the National Jewish Sanatorium at Denver, the Edward Sanatorium at Naperville, Ill., the Winfield Tuberculosis Sanatorium just west of Chicago, the Oak Forest Infirmary, conducted by the board of commissioners of Cook County, and the Chicago Municipal Tuberculosis Sanatorium. In all these various enterprises Dr. Sachs had a hand—indeed, controlled the admission of patients to all of them—and we have sometimes very seriously doubted the wisdom of placing such control in the hands of a single man, no matter who that man might be, how honest and able, or how wise concerning the solution of the problems in this field of public health.

But there cannot be two opinions as to the great value of the service Dr. Sachs gave to the world, nor can there be two opinions as to the great loss that humanity has sustained in his untimely death.

Many modern methods in the treatment of tuberculosis will stand as a memorial and monument to Dr. Sachs, and there is no doubt that there is no other man responsible to so great an extent as he for the great social evolution that has brought about almost universal institutional care of the

tuberculous, and the social service that has gone into the homes of the poor for the purpose of throwing protective devices about those homes and thus limiting the spread of that dreaded disease.

THE MODERN HOSPITAL and all those concerned in its welfare want to voice their appreciation of Dr. Sachs as a man and as a physician, and as a great social force, and to lament, with his other friends and admirers, his too early passing away.

### An Important Series of Articles

Elsewhere in this number of THE MODERN HOSPITAL occurs an editorial on "The Small Community Hospital." It seems to us that this editorial suggests one of the most important topics now concerned in the public health in this country. The more we have thought about it the more insistent has this problem grown, and, with a view to placing it fairly before public health officials, hospital people, and the medical profession, we have determined on the publication of a series of six articles, beginning with the June number, the topics to be as follows:

June—"The Preliminary Work Incident to the Creation of the Small Community Hospital—A Survey of the Community as to Its Needs." This paper to be accompanied by sample constitution and by-laws, rules of organization, etc. It will also attempt to present to the reader a key to his own community, so that he may determine whether that community needs a hospital; if so, what size and character, whether the community can support such an institution as his survey points out as the need, and how to proceed with the preliminary organization.

July—"Financing the Small Community Hospital—For Construction—For Permanent Support." There are two viewpoints as to the financing of the small hospital; first, that incident to the creation of a fund for the building, equipment, and opening of the institution; second, the creation of or arrangement for funds for permanent support. This paper will take the ground that no small hospital should be so conducted as to create a deficit, and that there is no reason why a deficit need be created. It will strongly urge a sharp line to indicate where and how the funds for charitable purposes shall be secured.

August—"Planning the Small Community Hospital." This paper will continue the survey of the first paper in so far as the character of the hospital is concerned. It will discuss the various services that must be conducted and the relationships between these services, and the proportionate number of beds in each. The paper will also discuss the relations between these services in the architecture of the building, whether it be a 10-bed or a 100-bed hospital.

September—"Building the Small Community Hospital." This paper will discuss material in the construction, foundations, walls, roofs, floors, partitions, doors, windows, and such details as elevators, dumbwaiters, refrigeration, vacuum cleaning, etc., and will attempt to set some standards to indicate where and to what extent these various features of installation can be advantageously employed in various size hospitals.

October—"The Organization of the Small Community Hospital." This paper will attempt to describe three phases of organization; first, the general organization of all factors presided over by the board of trustees; second, the administration of the hospital; third, the medical organization, which includes also the nursing and intern service.

November—"The Administration of the Small Community Hospital." This, the final paper in this series, will attempt to carry the administration of the small hospital out of the office of the superintendent and, as it passes down, through the various administrative departments, the stewardship, the laundry, the housekeeping, the culinary department, etc.

It will hardly need an argument to persuade hospital people that there is vast room for discussion on all the points suggested, nor is there an argument necessary to persuade those who are well informed that there is a great and growing class of people in every community in this country keenly alive to the need for the small community hospital, and anxious and willing to learn something about the intimate details. A good deal of care and study has been and is being given to this series of articles, and it is greatly to be hoped that it will contain food for thought and perhaps an occasional solution of a knotty problem here and there.

The military hospitals have their special history, and the first ones are mentioned under the reign of Henry IV. of France. In the eighteenth century they were quite general, but their number was so small and their accommodations so inadequate that Pringle considers these hospitals, with their bad air, as the chief cause of the diseases among the armies and characterized them as the terror of the soldiers.

I do not think myself entitled, with our limited experience, to mention an exact number of patients that on no account should be exceeded; but, whenever a new hospital is to be erected, the danger of having too many sick people under one roof or living close together should not be lost sight of, and moderate dimensions should be insisted on. To have only small hospitals in large cities would be inconvenient and a useless expense.—F. Oppert.

## THE EVOLUTION OF THE AMBULANCE

### Lessons of the War Concerning Transport of the Sick and Hurt—Dr. Fauntleroy's Report

The problem of the transportation of the sick is not confined to the exigencies of the European war. As the development of our hospitals has gone forward and new social conditions have injected themselves into American life, new demands have sprung up. It is not so long ago since we felt that a very prime necessity in considering the creation of a new hospital was to have it right in the heart of the populous district of the community, where those who were to be recipients of its services could be reached promptly and brought to the hospital without delay in quiet, good order. During this epoch, city noises and city dirt and bad air, smoke and dust were not only very bad for the sick, but they were expensive in making it almost impossible to keep the hospitals clean.

Fig. 1.

Then, by fortuitous circumstances, came the automobile, and with it, or a little later, the automobile ambulance, with the possibilities of rapid transportation of the sick; and just now, as the great European war comes on the scene to settle some of our chaotic problems, those who are concerned with the public health of this country recognize a necessity to revolutionize some of the building problems of our hospitals; it is no longer necessary to build in the dirt and noise of the busy population, because time and distance are rendered almost negligible by the quicker means of transportation.

But there are some problems to be solved—problems of expense concerned in the operation of hospital ambulances, problems of convenience in the handling of the sick and hurt in these ambulances, problems of dispensary service and visiting nursing, because these also have a problem in transportation.

Some of us are attempting to solve these various problems in one way, some of us in another. Only recently THE MODERN HOSPITAL published a story from the Burke Foundation Convalescent Home at White Plains, N. Y., in which Dr. Frederic Brush, superintendent, told us of that institution's solution of this problem in the conveyance of the sick from New York city over the twenty-five miles to the institution, and we illustrated in connection with that story the large omnibus ambulance used for the purpose. Other hospitals are thinking about carry-alls, partly for sitting-up patients and partly fitted with beds for those who must lie down, so that the latter emergency could be met when occasion required.

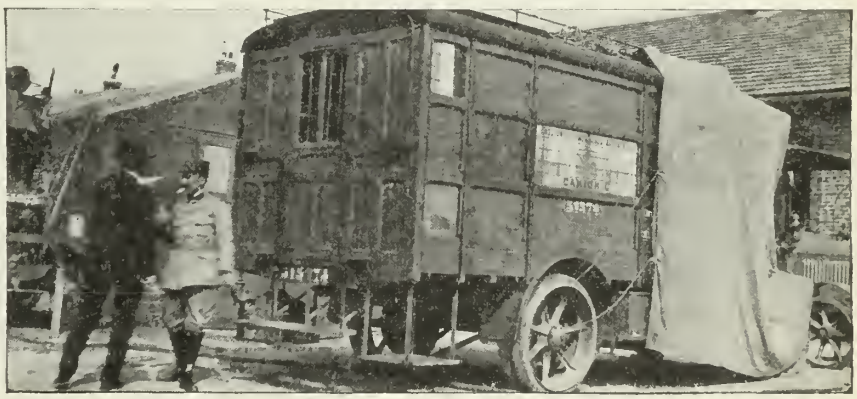

Fig. 2.

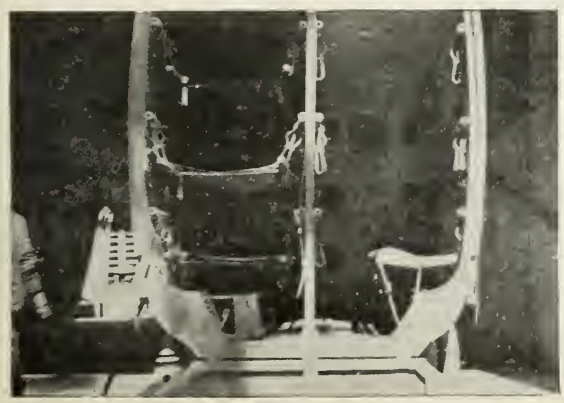

Fig. 3.

Then there are other institutions—as, for instance, the Milwaukee Municipal Hospitals outside that city, at Wauwatosa—where the problem is not yet solved; at Cleveland, with its magnificent Cooley farm of two thousand acres, with convalescent and tuberculosis accommodations, accommodations for the aged and infectious, where the problem is also not yet solved; the problem at Philadelphia, with its Bybury farm as an overflow for the Philadelphia General Hospital, but with no settled means of transportation; and in a hundred other places this same problem is insistent and those responsible for the institutions are doing their best to solve it.

Just a year ago the British Government, through the great Burroughs Wellcome Laboratory, offered a prize of $5,000 for the best hospital ambulance that could be de-

Fig. 4.

vised, as going to show that in England, too, the problem of the transportation of the sick was not yet solved.

And now, just in the midst of our perplexities, comes Dr. Fauntleroy with his most illuminating and graphic story of what the European war has developed in all medical lines, methods of treatment, simplification of surgery, the creation of portable hospitals, and the quick and convenient transportation of the sick.

The illustrations accompanying this article are from Dr. Fauntleroy's report to the Navy Department of our Government, and it is to the courtesy of the Navy Department and Surgeon-General W. C. Braisted that we are indebted for their reproduction. The illustrations are self-explanatory; they need no legends to vivify them; they show the transportation of the hurt from the battle fields under every conceivable situation; the stretcher route from the place where the soldier fell, back to the trench, from the trench to the field hospital—sometimes by ambulance, sometimes by motorcycle, and sometimes on the back of a comrade; then the railroad journey from the field hospital back to the base, and from the base home, sometimes by railroad and sometimes by sea.

The transportation problem was quickened and rendered vastly acute in Europe's war by the fact that hospital gangrene, tetanus, and sepsis of various sorts seemed to dominate the situation from the very outbreak of the war; soldiers lay for hours and sometimes even for days between the lines without a possibility of relief or rescue, and oftentimes men died solely for want of attention, and there is no doubt that even now many thousands of men who could easily get well are dying for want of attention and transportation. In Europe it is not a case of the transportation of single soldiers, but of many thousands, even many thousands per hour sometimes. And so with us in this country we have to think, not of the transportation of single individuals who are sick or hurt, but of two or three, or five or nine who perhaps have been the victims of an accident and who must be taken to the hospital rapidly if they are to have efficient care and treatment; and so the consideration of the ambulance becomes an acute problem.

There are some ambulances made that will transport two recumbent patients and three or four sitting up, but

Fig. 5.

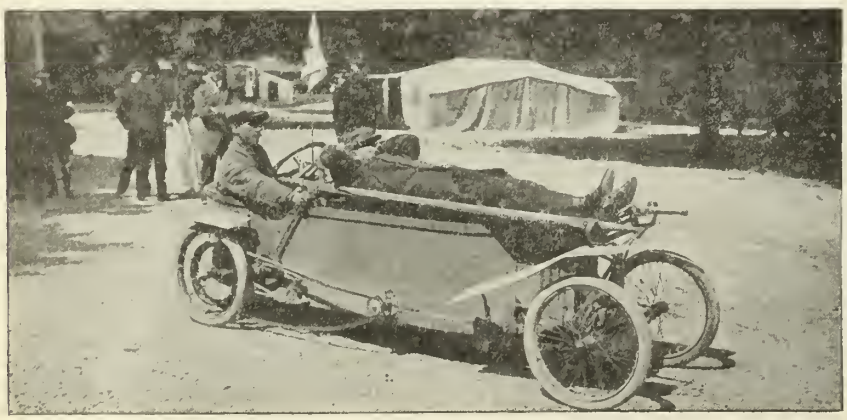

Fig. 6.

they are extremely inconvenient to admit the upper recumbent patient, and no device has yet been made that will make it easier to lift the patient from the ground into the upper berth of the ambulance.

In the European war the Red Cross men are always at hand to carefully lift the patient, and too many times the patient himself is in shock and does not suffer pain in being moved, but this particular problem is much more insistent with us. There is not the shock of war, there is not the deadening of the sensibilities as there is in Europe today.

In these illustrations of Dr. Fauntle-

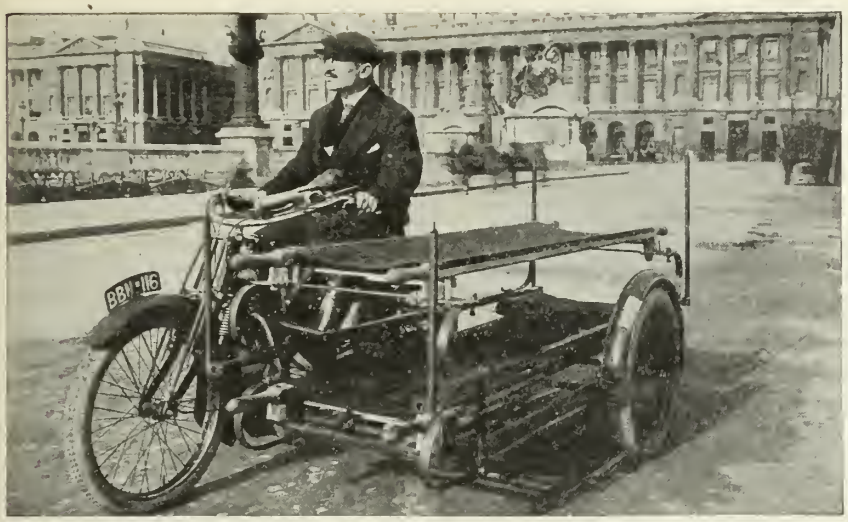


Fig. 7.

roy's there is very much food for thought. Is the European war in this transportation problem contributing anything for our use in times of peace? Are we any farther ahead? Are we nearer to solution of this problem because of the war?

We might dwell very briefly on some of the illustrations that Dr. Fauntleroy has given us. Beginning with Fig. 1, with its two-wheeled cart, used in the early part of the war to transport patients—this vehicle was especially prominent on the eastern front with the Russian forces and in the Balkans. It seemed to do well in mountainous country where heavy automobile ambulances could not travel. Then came larger horse vehicles with canvas covers, resembling very much the old "prairie schooners" of our western pioneer days. Then we have in Fig. 2 almost a homemade automobile, a great lumbering truck, primitive in construction, but very serviceable. In Fig. 3 we have an ambulance with a capacity of six stretchers, and in Fig. 4 a smaller one with four stretchers. In Fig. 5 we find an experimental truck with the rear letting down so that patients may be carried up an incline to the interior. Then we have in Figs. 6 and 7 two experiments with the motorcycle, and in 8, 9, and 10 we have the railroad transportation of the hurt.

Fig. 8.

Fig. 9.

Years ago, during the Boxer uprising in China, the armies of the European powers that were jointly attempting to settle the revolt had occasion to follow some native troops up the rivers and over long distances, sometimes through the mountains and through swamps, and there were occasionally pitched battles on hillsides and in valleys, and a good many of our American soldiers, as well as those of the European countries were injured. The question of the transportation of these wounded back to the posts, especially to Pekin, was very acute. There was the question of the stretcher service from the firing line to the field hospital; a second transport to the railroad, where there was a road; sometimes this second period was to a river, where the wounded were placed on junks and sampans, and had to be floated back to headquarters. There were sometimes half a dozen different agencies at different periods that had to handle the sick, and, as a high officer of the United States army stated the case, if one inch of that transport route was not provided for, so that things would run smoothly, the whole transport problem fell down and our injured and consequently our army was left in a hazardous situation.

Only recently, in the invasion of Mexico, the transport of the wounded and the sick across the deserts of northern Mexico presented a problem so acute that, in one instance at least, protests reached Washington about the inadequacy of the service.

Next month the third and last of these Fauntleroy problems will be presented—viz., that concerned in the creation of portable hospitals, their construction, their equipment, their supplies, and their administration. In this story, too, have we very much to learn from what the European war is developing. We,

Fig. 10.

who are finding it impossible to build hospitals adequate in character for $2,000 and $3,000 per bed, are to learn that half a dozen trucks can wind about the hills and valleys of France and almost in an hour empty their contents into the form of a finished hospital, with electric light plant, operating room equipment, sterilizers of all sorts, portable hot and cold baths, and the last detail of a modern hospital plant.

## "SOCIAL WELFARE"—MUCH ABUSED TERM

### Hotel McAlpin, However, Has Reciprocal Service for Employees as Well as Patrons—Some of the Details

I am glad to contribute to the valuable service THE MODERN HOSPITAL is giving to industrial and other business organizations regarding welfare work for their employees. I realize that the point of paramount interest to readers who are responsible for this welfare work is the economic value of it. In other words, what your readers would like to know from me is, what is saved every year pecuniarily and psychically to the Hotel McAlpin corporation through the operation of our emergency medical and surgical department.

It would be very interesting at this time to write long and explicitly on the various ways and devices we have for instructing and interesting our employees. That work is usually called "social welfare," but, as an institution, we object to the phrase. It would probably be inopportune at this time to enter into a discussion concerning the prejudice created by the term "social welfare" in the minds of those who, perhaps, most need its functions. Somehow it presupposes an idea of superiority among those operating it as distinguished from those who are expected to benefit by its operations.

We have for employment manager, Mr. H. E. V. Kersburg, graduate of Harvard and an all-round athlete. Directly or indirectly through his influence we have baseball, bowling, and tennis teams, and a swimming club which uses the public baths in winter. We have systems of merit, whereby increase of salary is contingent on good marks. The McAlpin is a patron of the school for bus boys, or, more properly speaking, the Hotel Men's Training School. Entertainments are given in the ball room for both sexes—music for dancing, lectures, moving pictures, etc. Until recently the New York Board of Education held evening classes in a room provided by the hotel management for the instruction of foreign girls anxious to learn the English language. But, notwithstanding all these efforts for the general improvement of the Hotel McAlpin army of workers (numbering something like 2,000), we still make no pretense of "social welfare" work, and really prefer to go without the credit if we must use the title. As Abraham Lincoln so aptly expressed it, "There is no permanent class of hired laborers among us; twenty-five years ago I was a hired laborer; the hired laborer of yesterday labors on his own account today and will hire others to labor for him tomorrow. Advancement—improvement in condition—is the order of things in a society of equals."

But to return to the question regarding the economic value of an emergency hospital to a corporation. Its first value, and of which, if time and space permitted, could be given innumerable illustrations, is contained in the application of that old saw, "an ounce of prevention is worth a pound of cure." I recently asked the chief of our medical staff, Dr. Sumner Everingham, what he considered the most valuable economic factor of our hospital, and without hesitation he replied, "the hands which it saves." Possibly the feeling and conviction which he expressed were in part due to the scenes in Serbia, from which he had recently returned. As he expressed it, "legs can be dispensed with, but how incapacitated is a human being without hands!"

Now, after all, a hotel is a home on a large scale, and most of the accidents occurring may be duplicated in the average home of twelve rooms—more or less. For instance, what housewife has failed to occasionally break a glass when drying it? And yet the almost inevitable cut resulting from the breakage has danger of infection reduced to the minimum in the home, and, if such a term were permissible, exceeding the maximum danger of infection in a hotel. But antiseptic dressings supplied in the emergency hospital reduce the danger of infection to almost nil. Again, what man or woman has wiped floors or stairs and failed to receive a tear from pin or other foreign substance? Here again occurs the value of the ounce of prevention; the slight injury is washed with an antiseptic and a dressing put on to prevent infection.

Our most common cases are lacerations and contusions; the former occur in our engine and kitchen rooms and housemaids' and housemen's departments; the latter are caused principally by windows and doors. Ours is a fireproof hotel, and practically all the doors and window sash are metal, which makes them very heavy. The antiseptics used are invariably iodine, boric acid, or bichlorid of mercury.

Another very common source of trouble is foreign body in the eye. The substance is removed, the eye washed, and the patient loaned an eye cup and given a bottle of 4 per cent boric acid solution. This one item of help to the employee would seem to warrant the existence of the hospital. Who could work with a foreign substance in the eye and do the maximum task? The patient is relieved of suffering, receives instant help, is taught care of the eye, and the corporation is not subjected to any loss through the employee being incapacitated.

We treat in our emergency hospital about 5,000 cases in every 365 days. Many of these cases, perhaps the majority, come under the head of that much hackneyed

term, "preventive medicine." It has been my privilege to sit in the hospital an hour at a time just for observation. During that period an incipient cold, a headache, a case of constipation, painful menstruation, dressing of a slight laceration from broken glass, may all have been treated and in such a manner as to leave no doubt in the minds of the patients regarding the interest of our head nurse, Miss Katherine Dalton. One great value of this attention is the education of employees concerning the care of small ailments. To illustrate, a Polish girl, talking only broken English, was brought in by another of her own kind; the latter evidently knew the value of the hospital; the former confessed to a prolonged case of constipation; she was not treated to a strong cathartic and sent about her work, but she was given an intelligent dose, cathartic and stimulant —one enhancing the value of the other—and then told to return at a certain hour. That case came immediately under expert observation; undoubtedly sickness was avoided. The general health of the girl was helped, and the corporation saved the loss of her wages during what might have been a period of inactivity.

The value of the foregoing facts may be measured in dollars and cents, but who can measure spiritually the value to the corporation (which is commonly supposed to be soulless) of the seeds of good-will which are sown in the heart of the employee by such consideration for his or her welfare?

Occupational diseases can hardly be considered as occurring among hotel employees. We have had, I believe, one case of "housemaid's knee," but occupational diseases could get very little headway under any circumstances in an institution where "prevention" is the watchword.

If space permits, I would like to give an illustration of the efficacy of the doctrine of proper feeding. We have an employee who, through improper selection of food from a varied bill of fare, became wasted and ill; ice cream was her breakfast, and even pastry had lost any attractions for her. The nurse took the girl under constant supervision; for two months she ate only under the direction of the nurse. Food especially rich in muscle and flesh-building qualities was selected; also, the progress from lighter to heavier diet was accomplished by degrees. No medicine was administered, except during the first few days when the treatment of rational feeding was started; today that girl is one of our best and healthiest employes. So much for doctoring without drugs.

Our chief of staff performs many minor operations. The accompanying pictures portray very well the up-to-date equipment of our hospital. While we have been troubled with very few serious accidents, we are always ready for them. Antiseptic dressings, cotton puffs and sterile wipes, are always ready in anticipation; many are used daily in examination of teeth, eyes, nose, throat, and ears. In the case of instruments are different sized scalpels, forceps, probes, groove directors, and throat, nose, ear, and vaginal speculums; also, there are tongue depressors, stethoscopes, head mirrors, snares, hypodermics, and that

Fig. 1.

Fig. 2.

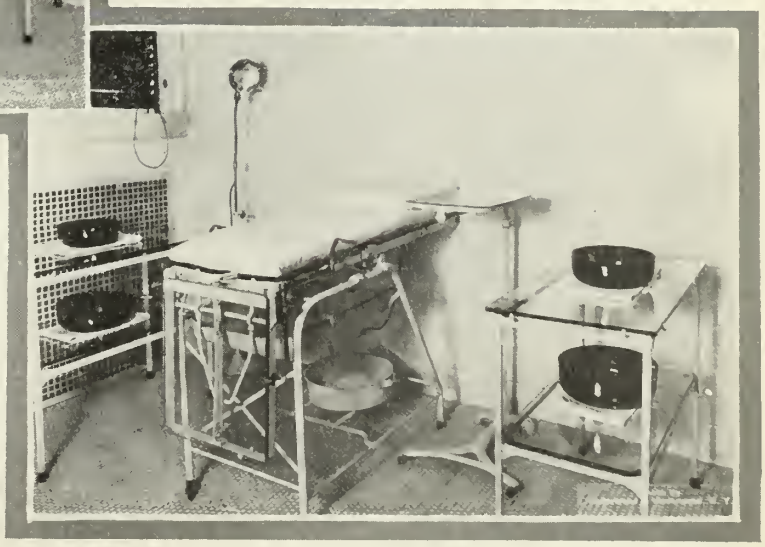

Fig. 3.

Hotel McAlpin. Fig. 1—Sterilizers and dressings. Fig. 2—Everything ready for an emergency. Fig. 3—Emergency operating unit.

interesting instrument used to determine blood pressure. The health certificates from waiters and cooks required by the New York Board of Health are issued after free examination by our own staff of physicians. After unsatisfactory replies to some of the questions in the examination, the Wassermann, Widal, or tuberculosis test is applied for which the particular case may indicate a necessity. Right here it might be stated that this corporation feels that it benefits itself by providing opportunities for such examinations free of charge. The idea of expediency not more than the idea of justice is contained in this personal opinion of its own acts. In connection with this idea I cannot do better than quote the words of President Wilson in his speech delivered before the Gridiron Club the other evening: "Justice has nothing to do with expediency. Justice has nothing to do with any temporary standard whatever. It is rooted and grounded in the fundamental instincts of humanity."

And that is really the mainspring of our endeavors—service, commercially, to our patrons; and service as a reciprocal relationship between employer and employee.

LOUISE MORRELL WHIPPLE,
Staff of Hotel McAlpine, New York.

## NEW BLODGETT MEMORIAL HOSPITAL AT GRAND RAPIDS IN OPERATION

### The United Benevolent Association Dedicates a $700,000 Building

A magnificent new home for the Union Benevolent Association Hospital at Grand Rapids, Mich., was formally opened March 31, the principal address being delivered by Dr. Victor C. Vaughan, dean of the medical department of the University of Michigan.

The new structure, which is five stories high and has a capacity of 125 beds, is one of the finest and most completely equipped hospital buildings in the country. It was erected by John W. Blodgett, millionaire lumberman and president of the Union Benevolent Association, as a memorial to his mother, and is said to have cost over $700,000.

In his presentation speech at the dedicatory exercises, Mr. Blodgett said that two central ideas had been followed in designing and equipping the building—first, to embody practically all the agencies of which those responsible for the planning could learn that would tend to aid in the diagnosis and care of human ailments; second, to provide facilities that would make it possible to maintain the institution at the lowest cost consistent with efficiency.

The architectural plans for the building were furnished by the firm of York & Sawyer, New York city.

In connection with the hospital the association has also opened a new home for the nurses of the institution, which is reported to represent an expenditure of $80,000. The nurses' home will perpetuate the name of Marion L. Withey, who in its earlier days was prominently identified with the work of the association.

The history of the Union Benevolent Association dates from the year 1847. From the beginning its work was confined to the relief of the needy poor. For many years an orphanage was maintained. At the close of the Civil War and after the State School for Children at Coldwater had been established, the orphanage was abandoned and a home for aged and infirm persons was established.

In 1884 a building with special hospital facilities was erected, and a training school for nurses, the second one to be established in Michigan, was organized.

# CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
*Army Medical Museum and Library, Office of the Surgeon-General, United States Army.*

**Some Factors in the Success or Failure of a Small Hospital.** Dr. R. E. Castelaw. The Jour. Mo. State Med. Assn., 1916, XIII, No. 2.

The principal factors in the success of a small hospital are dependent on the following outline: (1) a clearly defined need for a small hospital in the community; (2) the construction of an adequate and well-equipped institution; (3) the need of a sound and suitable financial basis; (4) competent and efficient administrator, nurses, and help; (5) scientific care of the sick, up-to-date laboratories, x-ray department, etc.; (6) the selection and maintenance of high standards in the visiting staff; (7) individual investigation of the financial resources of all patients and a discouragement of all indiscriminate charities; (8) an efficient system of accounting, whereby bills will be rendered at the proper time and incoming bills be discounted when due; (9) the responsibility of various department heads for the waste in their departments, as well as indiscriminate requisitions; (10) that the purchasing department be up-to-date on purchasing, and be free to take advantage of all changes in prices.

**Installation and Functioning of the Faucher Depot Hospital for Convalescents** (Sur l' installation et le fonctionnement de l' hôpital-dépot de convalescents Faucher). Dr. Rouquette. Arch. de méd. et pharm. militaires. Paris, 1915, LXIV, No. 3.

This hospital was established in December, 1914, for the purpose of receiving all convalescents discharged from the hospitals in the Department of the Gironde. The hospital consists of four large two-story pavilions, which before the war had been used as military barracks and were then converted, with great skill, into a military hospital. From December, 1914, to August 1, 1915, not less than 37,409 convalescents have passed through this hospital.

**The Hospital Question.** Ed. Illinois Medical Jour., 1916, XXIX, No. 2.

At the present time there is in Chicago a large hospital owned and controlled exclusively by doctors. A stock company was formed and shares sold to physicians. The proposition has been so successful that it has been necessary to enlarge the hospital to accommodate the patients of other outside physicians. This success has been due to the amiable relationship of the physicians who bring other patients to this institution. A feature which is of greatest value in the arrangement is the facility for team work among the doctors, in which they may at all times keep control over their own patients. There is now a company of physicians forming to build a hospital in another part of the city. This will be a stock company, and doctors of general practice will own the hospital and control

its policies. Doctors, generally speaking, would rather not bother with hospital administration, but they are being compelled to do so as a matter of self-preservation, and the sooner other institutions follow the same lines of administration the sooner the hospital question will be solved.

**Building Housing the Insane.** Allen Jackson, M. D. New York Med. Jour., 1916, CIII, No. 13.

The writer draws attention to the many old and inflammable buildings set aside for the care and treatment of the mentally defective, and the plea from the superintendents to replace these wooden structures with modern fireproof buildings. Lack of public feeling and sentiment in the care of the insane, also the added burden of taxation attached to demolishing and rehabilitating an old building, are the chief factors of delay. Many important and inexpensive changes can be made, resulting in a greater safety to patients, such as modern fire escapes, increase in yard space, ward arrangement, and heating and lighting. It is extremely necessary that rules governing employees and patients be enforced, thus reducing many of the prevalent items of danger in institutions of this nature.

**A Center of Neurology and Psychiatry of the Army** (Un centre de neurology et de psychiatrie d' armée). By G. Roussy and J. Boisseau. Paris médical, 1916, VI, No. 1.

Nervous disturbances among the soldiers are so frequent during the present war that the medical department of the French army established very early special hospitals for such patients in the interior of France. Recently it has been found advisable to establish such special institutions also near the front. The authors describe such a hospital containing 150 beds. The hospital has several divisions according to the kind of nervous disease. Patients with organic or functional nervous diseases are placed in a pavilion containing several wards. Each ward is divided by partitions into small rooms containing two beds each. About twenty rooms in two separate pavilions are destined to receive patients with mental disturbances needing isolation. Two large tents placed in the yard receive the convalescents, especially those who have recovered from hysteria. One pavilion is specially devoted to wounded soldiers with injuries of the nervous system—wounds of the brain and spinal cord.

**Hospital Statistics of the Province of Pavia** (L' assistenza ospedaliera nella Provincia di Pavia). Dr. L. Dori. Arch. di scienze ospedal., Bergamo, 1915, V, No. 7.

The author gives full statistics of the patients treated in the hospitals of the Province of Pavia for the year 1914. Of general interest is the table which gives the number of patients treated at hospitals in various countries of Europe during the year 1907. In that year were treated in Italy, 16.50 per 1,000 inhabitants; in France, 18.34; in Germany, 27.87; in Austria, 22.70; in Hungary, 16.80; in the Netherlands, 7.84; in Sweden, 17.37; and in Norway, 10.71.

**The Professional Struggle of the German Nurses in War and Peace** (Berufskampf der deutschen Krankenpflegerinnen im Krieg und Frieden). Charlotte von Caemmerer. 8vo, München und Leipzig, 1915.

The author claims that the nurses in German hospitals are worked too hard. Continuous work for twelve hours is not rare, and Sundays and holy days are days of rest for the nurses only in exceptional cases. She holds that the working hours ought to be reduced by law. The three-shift system, as it exists in many hospitals of America and New Zealand, should be introduced. Any kind of work is less thorough if the working time is immoderately lengthened. Though the salaries of the nurses in German hospitals have been raised during the last few years, they are still too low. The author demands that the nurses' course be extended to three years; only thus, she says, can nurses acquire the necessary knowledge in order to properly assist the physician in difficult cases.

**The Twenty-fifth Anniversary of the Kaiser and Kaiserin Frederick Children's Hospital at Berlin** (Zum 25. Jahrestage des Bestandes des Kaiser und Kaiserin Friedrich-Krankenhauses in Berlin). Dr. A. Baginsky. Arch. f. Kinderheilkunde, Stuttgart, 1915, XXV, No. 2.

It is not so very long ago that few cities had special hospitals for children. Sick children were placed in special divisions of general hospitals, or frequently in the same wards with adults. Berlin, though far ahead of other cities in the establishment of hospitals and hygienic institutions, lagged behind in this respect just like other cities. It was the great mortality of children from summer diarrhea which first brought about a general discussion of the need of a special hospital for children. Under the leadership of Virchow a society was formed in 1883 for the purpose of collecting moneys for the establishment of such an institution. But the contributions came in very slowly, and in 1886 only 175,000 marks were collected. Then the Empress Frederick interested herself in the undertaking and contributed 500,000 marks. The city furnished the grounds, and, as more and more contributions were made, the construction of the new hospital was commenced in 1890. In the course of a few years six beautiful large two-story pavilions were erected. In 1901 the administration of the hospital was turned over to the city, which added four more pavilions and an administrative building. The hospital has at present 356 beds, but the space is so ample that the institution can easily place 430 patients. The hospital contains separate divisions for diphtheria, scarlatina, measles, whooping-cough, skin diseases, etc.

**The American Hospital in Oppeln, Saxony.** By A. G. Abrecht. Sonntagsbl. d. N. Y. Staats-Zeit., March 19, 1916.

In September, 1915, four American physicians, Drs. Hermann Fischer, Louis Brooks, Joseph King, and J. Mathesheimer, with a number of nurses, started for Germany to offer their services to the German army medical department. They were assigned to the reserve hospital at Oppeln, Saxony. This hospital consists of thirteen divisions, with 18,000 beds in all. Each division occupies a separate building. The American division, with 300 beds, is the largest of all, and is established in a large modern school building, which, with its wide stairways, large halls, ample rooms, its cooking school, etc., is admirably adapted for the purpose. Only seriously wounded are sent to the American hospital. The American surgeons have had great success so far; among several hundred operations the mortality did not reach 1 percent.

Architect John C. Chapman, of Sioux Falls, S. D., has been instructed to proceed with plans for the hospital which the Methodists of South Dakota propose to build in the city of Mitchell, that state, and it is expected that the contract for the erection of the building will be let in June. It is to be a three-story and basement fireproof structure costing about $60,000. Rev. G. T. Notson, of Mitchell, has directed the work of financing the institution.

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# DEPARTMENT OF NURSING

Conducted by MISS ANNIE W. GOODRICH,
*Teachers' College, Columbia University, New York City.*

Please address items of news and inquiries regarding Department of Nursing to the editor of this department, Teachers' College, Columbia University, New York City.

## The University and the School of Nursing

Perhaps one of the most encouraging evidences of the advancement in nursing education is the ever-increasing number of universities under whose control departments or schools of nursing may be found. The universities maintaining schools, departments, or some courses in nursing are as follows: the universities of Colorado, Indiana, Iowa, Michigan, Minnesota, Missouri, North Dakota, Texas, and Virginia; the Columbia University, New York city; George Washington University, Georgetown, D. C.; Northwestern University, Chicago; Syracuse University, Syracuse, N. Y.; and the Washington University, St. Louis, Mo. The connection between the university and the school of nursing in the majority of instances, it must be admitted, is far from close, and the benefit of the connection is therefore limited.

The school of nursing of the University of Minnesota, opened in 1909, has the distinction of being the first school established on a somewhat similar basis as the other schools or departments of the university. It is under the jurisdiction of the medical school, with the superintendent a member of the faculty. The attitude of the university toward this school is significantly illustrated in a little incident mentioned by Miss Powell, the superintendent of the school. Miss Powell writes:

"In December we opened a new floor, which necessitated four more nurses than I had or would have until February. Four graduates were employed and put into the wards until our spring class came in. I have always been able to secure this kind of cooperation and assistance rather than to cut down hours after duty and to neglect classes."

The example of the establishment of the school of nursing as an integral part of the university has been followed by Washington University, St. Louis, Mo., and the University of Indiana. The superintendent of the latter school, Mrs. Ethel Clarke, presents the following interesting little sketch of the part this school takes in the Indiana University:

"The school of nursing of Indiana University at Robert Long Hospital is quite young, the first student being received on June 9, 1914.

"The school of nursing is an integral part of the university—one of its departments, just as the school of medicine, engineering, etc., are. The budget of the school goes to the Board of Trustees of the University, as do the budgets from the other departments, and the school of nursing receives its definite appropriation in the same manner that they do. The university is responsible for all the teaching given. The theoretical training is given especially under the direction of the Indiana University School of Medicine. The students go to the medical school for all work in bacteriology in order to have use of the laboratories. They also take the course in hygiene with the junior medical students. The domestic science training is under the department of home economics, and the theoretical and practical social work under the direction of the department of social service of the university.

"The hospital, which is modern and well equipped, with an active service, offers an opportunity for a thorough, practical training in surgical, medical, obstetrical, and children's diseases, thus making an excellent laboratory of both the school of medicine and the school of nursing. Being a department of the university, the entrance requirements are the same as for the school of liberal arts—a diploma from a commissioned high school.

"Students who have successfully completed a three-years' course in Indiana University will be given credit for the same and not required to duplicate any subject already covered. They will also have a time allowance of eight months made. If at the end of their training of two years and four months they have satisfactorily passed all examinations and hold good personal records, they will be entitled to the diploma of graduate nurse as well as to a bachelor's degree from Indiana University.

"Students are received into the school twice a year—on March first and September first. The preliminary course is given twice a year. The first four months the students are not on duty on the wards at all, except for supervised practice. The last two months of the six months of probation period are spent on the wards on regular eight-hour duty.

"It is preferred to take the students with college credit in the fall section, as it is found their work can be more easily adjusted at that time.

"The graduates of the school of nursing will receive their diploma with the students of the other departments at the annual commencement exercises of Indiana University held at Bloomington."

Miss Stimson, the superintendent of the school of nursing of the Washington University, St. Louis, promises to present shortly an account of the rather unusual opportunities that are being offered through the university and the new splendidly equipped general and children's hospitals that belong to the medical school, and also their very effective social service department. In this school, too, the time allowance of eight months is made for the college graduate and of six months for students who have taken the preliminary course at Simmons College or Teachers' College, Columbia University. It is obviously just that credit should be given and the practical experience in the hospital wards shortened for the college graduate.

The requirement of the full three-years' training following the college course has discouraged many college women from entering the nursing profession. The credit which these schools are giving has already appreciably increased the number of college women entering them. A not less important problem has not yet been solved—namely, the evaluation of the practical experience in the hospital ward, so that it may be correctly interpreted in terms of university credit. This subject is being studied in several schools, and we are awaiting the result with interest.

A. W. GOODRICH.

## An Ideal Children's Service

BY HELEN WOOD, A. B., R. N.,
Late Superintendent of Nurses, Children's Hospital, Boston.

During the last decade the attitude of the medical profession has been directed very emphatically toward the field of preventive medicine. Neither the physician nor surgeon is content in curing disease; he must needs go back to study the cause of the malady and subsequently the eradication of disease even before its apparent existence. Moreover, the profession has called other scientists to its aid, and has shown to them their duty in the great propaganda of health. The result is the prominence of the public health officers and organizations, and the importance given to the education of the people, rich and poor, cultured and ignorant, wherever the need exists, in the great laws of physical well-being. As the child is "father to the man," and as in the study of prevention of disease attention is given to the importance of more and more remote causes of abnormality, so first the medical profession and then the public have awakened to the fact that a healthy man is likely to develop only from a healthy child, and, vice versa, a weak and sickly child does not stand a fair chance of becoming a strong and vigorous

adult—he is robbed of his birthright. The idea is not new—it is as old as the days of Spartan supremacy, but its scientific treatment is a modern accomplishment. Unlike the Spartan, we today would preach that it is the duty of the public as well as of the parents to see that the child is given the chance to live in a healthy body and with a sane mind. Hence have arisen the numerous institutions and associations concerned with the promotion of the health and the care of the child; and an increasing number of problems—economic, social, medical, and civic—are being referred to infant mortality, baby welfare, children's bureau, milk station, and hospital or other medical organizations. To these the nurse who knows and understands children, and who has been adequately trained in caring for them, may and should be a great asset.

Nursing, following in the footsteps of medicine, has also turned much more attention to the care of children, and its training schools are teaching the laws of prevention as well as the care of the sick—that it is even a greater thing to keep people well than it is to cure an ailment, and that the nursing of the child, be he sick or well, is a matter of grave importance, deserving of special training, not only for the temporary sake of the individual, but for the ultimate good of society. This sounds very ideal, but the increasing attention of the scientific care of children, from a nursing point of view, is conspicuous. Not many years ago many of our best schools of nursing did not pretend to give their pupils any systematic training in the care of children. Today it is required by law in some states that nurses shall be given this experience, and all interested in the education of the nurse are convinced that no school gives a complete course that does not include in its curriculum some systematic instruction in pediatric nursing.

With this growing need in our schools in view, we have tried to outline what would be in a three-years' course in nursing an adequate course in the care of children. We should not call the plan ideal, for fear some may think we have forgotten the practical and are reveling in dreams; but we have tried to plan a course that should be possible of development in almost any large hospital having a children's department. There are advantages in giving the training in a hospital exclusively for children; but it can be done much more generally, more economically, and probably in a better relation to other branches of nursing, if given in a children's department of a general hospital, provided such department is large enough to present a good clinical field. Such, then, is the type of hospital in which we shall plan a children's service for the training of nurses.

No nurse should plan after graduation to specialize in children's work without at least six months' systematic training in the subject; this, however, seems a disproportionate amount of time in a three-years' course. Consequently the undergraduate service may be planned for four months (a minimum)—eighteen weeks according to the following outline—with an added two or four months' post-graduate work for those who wish to specialize in certain branches.

*The outline* of the course shall be as follows:

1. Six weeks medical work, including practice in computing and making milk modifications.
2. Six weeks surgical and orthopedic work.
3. Six weeks dispensary and visiting or follow-up work.

*The post-graduate* course shall comprise:

1. One month contagious nursing or medical night duty.
2. One month public health and social service nursing.

Optional—Three months executive work as head nurse or two months public health work.

These last two are to offer added experience on a small salary for those who wish to continue the course.

The eighteen-weeks' course may by some be considered too short a period for satisfactory experience, but let such remember that it is intensive work built on a good general groundwork. The service should not be given the nurse before the last of her second year of training, when she shall already have received her routine medical and surgical training, and have completed her courses in dietetics and materia medica. It is also most advisable that her children's work should follow her training in obstetrics. One of the great drawbacks to the equipment of nurses taking care of sick children is that they have made a speciality of abnormal conditions when they know far too little about the normal. The result is shown particularly in private nursing. When the child is critically ill, the nurse has the situation under control; but during convalescence, or with a chronic case or a well child, she is at a loss to realize her responsibility and opportunity. Unless she has dealt with children outside of her hospital training, the hospital has taught her nothing of the normal child. In this we have failed very markedly in planning courses in the nursing of children. We believe, however, this difficulty may be overcome, and for this reason the course in obstetrics, with its opportunity to learn by the teaching of and by experience with the normal infant, should precede the special training in the care of sick babies. Another point to be considered in regarding the intensity of this special course is whether the nurse shall have any care of children in other departments of the hospital. She may possibly have it in the private ward *after* her regular children's service. From neither economic nor educational points of view does the private patient duty combine well with the organization of ward routine; and, moreover, private work in itself is a special field to be considered in the latter part of a nurse's training. As to operating experience—again from a consideration of administration—this, too, is better to be combined with general work; and the nurse will therefore have her children's service further supplemented in the operating room. In the preliminary course of the training school, most hospitals plan for the probationer to spend some time each day on the wards. Here, again, is another opportunity that the very young nurse may at least be initiated in the handling of children.

To return to a more detailed description of the service:

1. *The Medical Service.*—In spite of the fact that this is by far the most critical of the three groups of cases (medical, surgical, and orthopedic), it gives the best field for the teaching of nursing procedures, most of which should be by bedside instruction in small sections in the wards. Because of frames, casts, dressings, and wounds, the last two groups of cases do not give the nurse good experience in handling children, nor do they give as great opportunities for the various kinds of treatments to be taught. And it must be remembered that the nurses beginning this course have had at least a year and a half in general nursing, and so from the first can be relied on in more critical situations than if her training were beginning here in the children's wards. During this first service the first half (three weeks) should be under careful supervision and personal instruction by a supervising teacher, whose work will be supplemented by the graduate nurse in charge of the ward, or, if the service be large, by an assistant instructor. This should be a concentrated period in demonstration and practice. During the remainder of her medical duty, which we may call her senior duty, the nurse is left more to herself, with the exception of a part of each morning which she will spend in the food

room in connection with the ward, where the milk modifications (the theory of which has already been studied in the course in dietetics) are prepared for the babies. Here every effort should be made to keep the routine from being mechanical. The pupils should be able to work out any percentage feeding that may be ordered before attempting to put up any formula, and the most scrupulous technic of details should always be insisted on. By these nurses should the calorie charts of all the babies be kept, and these same babies, when on the medical service, should for the time being be their special charge. Although a pupil always depends on a doctor's order for a formula, she should be taught in caring for a baby, and observing his weight, stools, and general behavior to recognize the various forms of indigestion, and know to what extent such may be regulated by the proper modification of a milk diet.

2. *The Surgical and Orthopedic Service.*—During the next six weeks of the course the instruction is less intensive—is more a special modification of procedures already learned in adult work. As previously, the nurse acts as a junior pupil for the first three weeks, and as a senior, with greater responsibilities, the latter half of the period. Her senior service on the surgical and orthopedic wards may be spent in night duty.

3. *Dispensary and Visiting Service.*—The last period of the undergraduate course is spent in the dispensary or out-patient department, in the morning attending the various children clinics, perhaps spending one morning each week in the various departments—i. e., medical, surgical, orthopedic (including corrective work), nose and throat, eye and ear, skin and nerve. This should be arranged according to clinical material. The afternoon should for the most part be spent in follow-up work in the homes of the people, where the nurse meets again her patients of hospital or dispensary under much different surroundings, and her picture of the case for the first time begins to assume proportions of completeness, where the hospital experience is proved to be but an incident (important, though, it is) in the greater and real picture of cause and effect, involving its multiplicity of human and social problems. In visiting her patients the nurse has many opportunities to test her powers of observation. She detects latent trouble in other children, learns to trace the cause of disease much nearer to its beginning, studies home hygiene and sanitation first hand, and begins to be a teacher herself as she shows the mother how to dress a wound, or the little sister how to care for the baby. This combination of morning and afternoon will open the student's eyes to the larger field for which she is preparing; and, if she is to continue this course by post-graduate work, she will now be making her decision. We are at present advocating this follow-up work from the point of view of the training of the nurse, but it is not out of place to call attention to its advantage both to the patient and to the hospital. The patient continues under the same advice and care which began his cure, and the hospital has its records completed in a way that would be improbable were the case to be dropped or even transferred to another organization. The above is not the nurse's only dispensary work; it is but one department in the general hospital out-patient plan. Consequently the period must be so planned that none of the general work which the pupil has had or is to have will be duplicated in her children's service.

4. *Post-graduate or Elective Work.*—No allowance has apparently been made for night duty in the medical wards, where the pupil's duty was begun. The first six weeks come far too early in the service to give a pupil what is probably the most responsible period of the whole training. Lacking the supervision existing during the day, these patients—generally the most critical in the hospital—should be left in the hands only of those ably equipped by training and tried judgment for the responsibility. Therefore we would offer the opportunity of night duty in these medical wards to those post-graduates who wish further medical experience—there is none better. Provided she does not wish this night work, the nurse may substitute for it a month of duty in the contagious ward, which we have not included in the regular prescribed course. The second month of graduate work should be definite instruction, observation, and experience in the public health field. Since this should be made adaptable to the needs of the individual in a way not necessary in the case of the undergraduate, we shall not elaborate on its details more than to say that the month of public health nursing should include in theory—and in practice when possible—rural and city nursing, children's institutions, school nursing, milk stations, dental, tubercular, and other special children's clinics. It should be under the general direction of the training school, but its special instruction intrusted to the various public health organizations in the city, which shall have some formal affiliation with the hospital and training school in question. This graduate course should be so elastic that, if desirable, the nurse may extend her experience for two or three months further. If her bent is in institutional lines, an opportunity of head nurse in one of the children's wards should be available; but, for the sake of the hospital, this should not be for less than three months. If she tends toward the public health field, there should be an opportunity for practice work under some of the various organizations under which she has just had two months of observation and instruction. The last two appointments should be on salary.

There will be no difficulty in obtaining post-graduate applicants. The demand for such work is far greater than the opportunities open. If these applicants have never had any children's work, they should be allowed to enter only as pupils for the whole course. If they have had sufficient children's work, they may register for only the work designated as "elective." The arrangement for post-graduate work in the department for graduates of other institutions should be given due consideration and attention. It is the duty which the large hospital with an adequate children's service owes to the profession and to the public.

*The Staff.*—Whatever the size of the hospital, if it be large enough to adequately equip a children's department, the size of the nursing staff would remain fairly constant. The medical and surgical wards should each be in charge of a graduate head nurse specially qualified in that particular phase of the subject, who shall consider herself a teacher as well as an executive. The graduate in charge of the dispensary should have at least one graduate assistant (more if the clinics are very large), this assistant to have the oversight of the visiting work and the work in any of the outside affiliations necessary in the elective course. All the officers will be directly responsible to the supervising nurse, whose chief business is the instruction of the pupils in the children's department. Should the school be large, the chief supervisor will need an assistant to take over some of the routine bedside instruction, the follow-up work with the pupils on the ward, and the immediate supervision of the food room. The night supervisor of this department may be the assistant of the general night supervisor of the hospital; but with this one exception, the above-named people have no responsibility elsewhere in the institution than in this one department.

*Method of Instruction.*—A demonstration room to be

used as a class room is always desirable, but can never take the place of actual bedside instruction. Its use has developed from the inexpediency of teaching wholly by illustration in general wards. This objection is fortunately removed in a children's ward, and consequently most of the instruction may and should be carried on in the best laboratory available—by the bed of the patient. The instructor should be allowed enough time and assistance to have this done in small groups of students.

The theoretical work, given chiefly in lecture form, may be divided into five groups as follows, each group representing one lecture period a week:

A. *Medical*—Twelve weeks.
1. Infant feeding.
2. Infant feeding.
3. Gastrointestinal diseases (malformations and mechanical disorders, new growths and traumatic diseases).
4. Gastrointestinal diseases (forms of indigestion and infections of the gastrointestinal tract).
5. Respiratory diseases.
6. Diseases of the new-born.
7. Heart and circulatory diseases.
8. Nephritis and diabetes in children.
9. Acute infaction diseases (typhoid, meningitis, tuberculous, etc.).
10. The exanthemata and so-called "contagious" diseases.
11. The exanthemata and so-called "contagious" diseases.
12. Normal excretions of the body. A special study of stools and urine, with pathological changes apparent in disease.

B. *Surgical and Orthopedic*—Twelve weeks.
*a.* Surgical—Six lectures.
1. Congenital deformities (hare lip and cleft palate, spina bifida and hydrocephalus).
2. Hernia (types and causes, use of trusses, general systems of operations).
3. Malformations (pylorus stenosis, obstruction, imperforate anus).
4. Genitourinary deformities.
5. Fracture and dislocation.
6. Abdominal injuries (peritonitis, acute intestinal obstruction, intussusception).

*b.* Orthopedic—Six lectures.
1. Deformities due to tuberculosis (treatment and general care).
2. Congenital malformations and deformities (dislocation, club feet, etc.).
3. Deformities of the spine (Pott's disease, curvatures, etc.).
4. Diseases due to faulty nutrition (rickets, knock-knees, bow-legs).
5. Infantile and other paralyses.
6. Corrective work (use of Zander, exercises and massage; special splints and other apparatus used for children).

C. *Hygiene and Special Therapeutics*—Twelve weeks.
*a.* Child hygiene and psychology—Eight lectures.
1. Necessary qualifications of those who care for children.
2. The physical examination of the normal child (general appearance and characteristics, standard weight and measurements).
3. General hygiene of the child at different ages (normal dentition and its complications).
4. General hygiene and sanitation of the nursery and school room.
5. A normal day's program (regulation of meals, exercise, sleep, clothing, out of doors, and general environment).
6. Habits (how to deal with pernicious habits).
7. The psychologic and therapeutic value of play.
8. Differentiations in the stages of childhood, with special discussion of the adolescent boy and girl.

*b.* Materia medica as applied to children—Four lectures.
1. A review of those drugs used especially in children's diseases (comparative susceptibility or resistance to drugs, Young's rule of dosage, idiosyncrasies).

D. *Nursing of Children*—Twelve weeks.
1. Bedmaking and the handling of bed patient.
2. Baths—cleansing and therapeutic (care of the skin and scalp, treatment of pediculosis).
3. Enemata and rectal irrigations (gavage, lavage).
4. Temperature, pulse, and respiration in children (care of special precaution and isolation cases).
5. Symptomatology.
6. Symptomatology.
7. Clothing (restraining children, keeping on of dressing, bandages, restrainers, cuffs, mittens, frames, etc.).
8. Preparation for operation (care of ether and post-operative cases).
9. Care of special surgical cases (drained wounds, hare lips, and cleft palates).
10. Care and handling of orthopedic cases.
11. Constant drainage (catheterization, collection of specimens for pathological and bacteriological study).
12. Use of counter-irritants in children.

E. *Special Lectures*—Sixteen weeks.
1. Emergencies of childhood (emphasis on home treatment).
2. Diseases and treatment of the eye.
3. Diseases and treatment of the ear.
4. Diseases and treatment of the nose and throat.
5. Specific diseases in children.
6. Mental defects (idiocy, imbecility, cretinism, mutism).
7. Schools and institutions for mental defects.
8. Mental hygiene (the care of the abnormal child in normal surroundings).
9. Infant mortality (statistics and organizations).
10. The racial significance of the child (heredity and eugenics).
11. Isolation and disinfection.
12. Dental clinics and dental prophylaxis.
13. Occupations and amusements for children.
14. School nursing.
15. Milk stations.
16. The board of health and its relation to child welfare.

Groups "A" and "B" should be given by doctors, "D" by the supervising instructor, and "C" by whoever at the time is best fitted. We have previously called attention to the deplorable lack of attention given to the knowledge and care of the normal child, and it is to meet this need that the first eight lectures of group "C" are planned. In "B" the orthopedic will follow directly after the surgical lectures, making together a course of twelve lectures. According to this plan the nurse will have five lectures or classes a week for twelve weeks, course "E" alone extending to sixteen weeks, leaving the last month fairly free from class work for the final examinations. The five groups as outlined are as lecture courses, with the exception of course "D." This would be better conducted as recitations—a supplementary review of the daily instruction on the wards. The student should have free access to a good reference library, and be obliged to use it. At present there is no distinctly good book on children's diseases from the point of view of a text-book on nursing, but we thoroughly advise choosing the best there is, and using it for recitation purposes.

*The Administration* of such a course is most difficult when we wish to have all sections running equally smoothly, with no overbalance of untrained nurses that may be detrimental to the patient's welfare. First of all, let us recall that the youngest nurse in the service has had one and one-half years of general training. We shall consider the eighteen weeks allotted to this children's service divided into three-week periods, with a new group of pupils beginning at each period. When the first class has completed its three weeks of junior work on the medical ward, it passes on to senior medical duty, and a new junior class enters. At the end of another three weeks the senior medical becomes the junior surgical and orthopedic, the junior medical becomes the senior medical, and another new class enters as juniors in the medical wards. Thus it will be in these medical wards that we have the youngest nurses of the services, and consequently the more intensive teaching, and the more careful supervision of both nurses and patients by supervisors and instructors.

The next question of importance, although not second in difficulty of arrangement, is the assignment of theoretical work. Group "D," in charge of the instructor or supervisor, should be begun as outlined with each entering class—i. e., every three weeks. This will mean that the

instructor will be giving the same course to six different classes at the same time. The other courses—purely lecture—will be self-repeating; and the pupil enters the course, whether it be lecture 1, 6, or 12, when she begins her children's service, and continues for the twelve lectures (sixteen in course "E"), which will complete the group. For some classes this arrangement will give a slightly illogical sequence, but need cause no special lack of efficiency if the small group instruction on the wards is ably handled and well correlated.

It will be seen that when the lectures of courses "A," "B," and "C" are being given, all the pupils have left the wards; therefore they may be given at such time of day—three days a week—when the dispensary nurses who have finished their twelve weeks of lectures may substitute on the wards, or relief may be sent from other parts of the hospital by nurses who have previously had the children's service. Since all the pupils will be attending the lectures of group "E" at the same time, it will be found more convenient to hold these lectures in the evening (once a week). The night nurses in the surgical wards will be obliged to miss three of this course, but, since they will still be in the hospital sixteen weeks later, they may arrange to attend these same lectures at the later date.

In review let us picture a concrete example as an illustration:

General hospital, 250-300 beds. Children's service, 72 beds. Medical service, 36 beds. Surgical and orthopedic, 36 beds.

Pupils entering in classes of six every three weeks. Assignment—12 pupils on medical wards (6 junior, 6 senior). All pupils on day duty. Post-graduates on night duty, 3. Ratio day nurses to patients, 1:3; ratio night nurses to patients, 1:12.

Twelve pupils on surgical and orthopedic wards, 9 day nurses (6 junior, 3 senior). Night nurses, senior pupils, 3. Ratio day nurses to patients, 1:4; ratio night nurses to patients, 1:12.

Total pupils on ward duty, 24; total pupils dispensary and visiting (6 juniors, 6 seniors), 12-36 pupils in children's service.

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## The Nursing Care of the Insane in the United States[1]

A REPORT PREPARED BY KATHARINE TUCKER, R. N.,
Chairman of the Committee on Care of the Insane of the American Nurses' Association.

When we consider that there are approximately 200,000 patients suffering from mental diseases being cared for at present in hospitals for the insane in this country, we realize to some degree the extent and importance of the problem. It is very pertinent for us as nurses to ask what part the nursing profession is playing and what contribution it is making in the care and prevention of this most prevalent sickness. At the outset, I think we have to admit that as a profession we are only just beginning to see our opportunity and to hear a very faint call for our services in this field from the doctors and the public. Your committee, all of whom are directly connected with some form of work for the mentally ill, feel very strongly that the time has come when nurses must take their place in the forward movement for the adequate care and ultimate prevention of mental diseases as they have in the tuberculosis and infant welfare movements. As a first step in this direction, it was deemed necessary to know the exact present status of nursing the insane in this country. Though printed questionnaires are in many ways so unsatisfactory, one carefully prepared may bring forth most illuminating information, and this seemed the only practical way at this time of gathering together the facts we desired.

Through the hearty cooperation of the National Committee for Mental Hygiene your Committee on the Care of the Insane is able to report on the result of a questionnaire sent out to all the state hospitals for the insane in the United States. The questionnaire was made out by your chairman in collaboration with Dr. Thomas W. Salmon, director of special studies of the National Committee for Mental Hygiene, which committee assumed the entire expense. Your committee's report consists in a summing up of the material obtained from this questionnaire. From 154 questionnaires sent to state hospitals, 71 answers have been received. Though this is not even half of the number sent out, the answers are sufficiently typical for us to draw conclusions from them in regard to all of the state hospitals for the insane in the country.

In the 71 hospitals heard from, 30 of them have no training schools at all for nurses, all the work being done by attendants. Therefore the figures that follow will relate to the 41 state hospitals where there is a training school.

It was surprising to note that, in the majority of the state hospitals where there are training schools, these have been organized for over ten years, and many of them for over twenty years. This fact is discouraging, viewed in connection with their standards. In 16 of the training schools the course is two years, in 10 it is three years, and in the others it varies between two and three years. In certain of the hospitals the training school makes a distinction between nurses who will be eligible for their R. N. and those who will not. A course of three years is required for those who are eligible, while only two years is required for those who are not. This is certainly paradoxical, as those who have had the least preparation for entering the training school would certainly seem to need the longest course. Such a variation would not tend to raise the standard of the school as a whole. Two or three other schools have the nurses' training tacked on to the course for attendants as a six-months' post-graduate course.

In the hospitals for the insane the superintendent of nurses often holds a most anomalous position. In 14 hospitals she is not allowed the title of superintendent of nurses, but is called either assistant principal or principal of the training school, or more frequently simply the chief nurse. Though at first this may appear an insignificant fact, it does seem to take away from the dignity of the position, and further facts bear out this feeling. The training and experience of the superintendents vary. The largest number are graduates from a hospital for the insane and have taken a post-graduate course in a general hospital. Eight had previous training and experience only in a hospital for the insane, while an equal number had experience only in a general hospital. In one training school the superintendent was a woman physician, and in four the medical superintendent of the hospital acts also as superintendent of the training school. Their salaries vary from $50 to $100 a month, the majority being $75 and $100, but in eight hospitals the superintendents of nurses receive less than $65. Quite often the superintendent has to act as head nurse in the operating room, and in one instance as occupational instructor, besides her other duties.

In practically all of the hospitals it is noticeable how little complete authority is given to the superintendent of nurses. In only a few cases has she control of the hours of the pupil nurses, and in many instances she has no control over the classes or assignments. In but 14 state hos-

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[1]Published through the courtesy of the "American Journal of Nursing."

Unfortunately, Miss Tucker's report on "The Nursing Care of the Insane in the United States" was intended for the April number, and the point which Miss Goodrich wished to make in her editorial reference to it was lost. Miss Tucker's report is full of meat and it should be carefully studied.

pitals has she complete charge of the pupil nurses in these ways. In the other hospitals, classes, assignments, and hours are either entirely under the direction of the superintendent of the hospital or partially so. Though the charge nurses are a very important part of the nursing equipment of the hospital for the insane, in 14 hospitals the superintendent of nurses has absolutely no authority over them and in eight hospitals her authority is only partial. The same condition is found as to attendants even to a greater degree. The tendency seems to be to relegate the duties of the superintendent of nurses to the limited field of the training school, in which there may be but a few pupils, rather than to supervise those giving nursing care to the mentally ill throughout the institution. In very few instances does the superintendent have any authority over male attendants or nurses. When she does have it, it is principally in connection with the class work of those taking the training school course. To be sure, the training schools, as such, in state hospitals are comparatively small, the majority not having over 25 pupils, and many having between 10 and 15. There is, however, a large group of attendants and charge nurses, exclusive of pupils, in most of the hospitals, this number being between 60 and 100, several having as many as 300 or 400. Thus the superintendent of nurses has little or nothing to do with the greater part of the nursing service given to the patients.

The qualification for admission to these training schools varies greatly. The majority ask for only a grammar school education, though 13 require grammar school and one year high school or its equivalent. Three have no requirements whatsoever, and in many others the requirements are decidedly flexible. In 21 of the hospitals their requirements for admission are the same, or equivalent to the requirements in the general hospitals in their state. Very few hospitals had a higher age requirement than 18. When it is considered that no nursing requires greater tact, maturity, and judgment than nursing the mentally ill, this low age requirement is particularly significant. Usually the superintendent of the training school accepts the applicants, though in 13 hospitals the superintendents of nurses decide what pupils are suitable for the training school. The pupil nurses are paid anywhere from $15 as a minimum to $35 as a maximum, though the usual rate is $20 as a minimum to $25 as a maximum.

The situation in regard to hours of work, vacation, etc., of pupil nurses in state hospitals is one of the most serious aspects of this whole question. Though six of the training schools have the eight-hour system, in almost all of the other 35 hospitals the nurses are actually on duty from twelve to fifteen and one-half hours out of every twenty-four. To one who knows the strain of working with mentally sick patients, this statement is appalling. A few hospitals give absolutely no time off a week, even with these long hours. Two weeks' annual vacation is almost the rule, though three give only one week, and five give ten days. Very few give any extra time off on holidays.

As to the actual curriculum of the training school, practically all say they attempt to approximate a general nurse's training. The probationary period varies from six weeks to six months, most being two or three months. One hospital has no probationary period at all, 13 of the hospitals give both practical and theoretical class work during the nurse's probation, but in the others it amounts to little more than direction in their practical ward work. Four hours a week theoretical work throughout the year, with the exception of the summer, is the average. The lectures are given for the most part by the regular medical staff and superintendent of nurses, though in six hospitals the classes are entirely in the hands of the medical staff. Three hours' practical work is the average, and this work is usually given entirely by the superintendent of the training school. The lectures given cover, as a rule, the following subjects: anatomy, physiology, materia medica, practical nursing, surgical nursing, obstetrics, nervous and mental diseases, hydrotherapy, bacteriology, urinalysis, and a few give dietetics. Only 18 out of the 41 hospitals where there are training schools are affiliated with general hospitals for obstetrics, surgery, and children's diseases. This means that the nurses in state hospitals in most instances have no experience in general nursing, except with comparatively few patients.

In the answers received in regard to the housing and recreation facilities for the pupil nurses we find one of the explanations for the reason that so few women take up mental nursing. In 12 of the state hospitals the nurses have rooms off the wards of the patients, and in nine other hospitals they are housed in dormitories in the hospitals, in the administration building, or in separate quarters for them in the hospital building. Only 19 hospitals have nurses' homes. In 22 hospitals anywhere from two to four nurses room together, there being only 13 hospitals that afford separate rooms for their nurses. The majority of pupil nurses have no separate dining rooms, having to eat in the same dining room with the patients—sometimes at the same time, or before or after the patients have eaten, or else the nurses eat with the attendants and other employees of the hospital. Many hospitals make no provision whatsoever for the nurses to receive callers, and in the majority of cases they have to receive their friends in the public or general reception room. Five hospitals have tennis courts, one a golf link, and many afford an opportunity for dancing, but nine hospitals make no provision whatsoever for recreation. To be sure, considering their hours of work, little time is afforded them for anything but work and some sleep.

Considering these facts, it is not surprising that 23 hospitals tell us that they have difficulty in securing suitable or enough pupil nurses. Those that state they have no difficulty, considering what most of them offer, make us seriously question their idea as to suitability. One superintendent writes that there has been no difficulty in securing nurses since the recent business depression. Cause for humor might be found in the explanations of the superintendents as to the reasons for this difficulty were it not so tragic. Only two of the number see any responsibility on the part of the training school or hospital for this condition. These two feel that long hours and undesirable living accommodations have something to do with it. From the standpoint of the others the nurses are to blame. One gave the answer that the scarcity was due to lack of seriousness on the part of the younger generation and indifference as to their future prospects. Many state that women do not wish to nurse the insane. The most frequent answer as to the grade of pupil nurse is that she is fair. Poor education is the greatest drawback mentioned, though some hospitals frankly state that both as to education and personality they cannot get the proper type of women. In a little less than one-half of the training schools the nurses are eligible for the examination for registration. From all these 41 training schools, out of the last class graduated, 64 nurses have received their R. N.

Suggestions were asked as to changes that would be recommended. The majority had no recommendations to make in spite of what seem to be most serious conditions. Higher pay, higher educational requirements, affiliation

with general hospitals, shorter hours, and a sharper distinction between nurses and attendants were the most frequent suggestions. Other interesting remarks were the need of an extension of training school throughout the whole hospital, more women in the male wards, exchange of pupils with general hospitals, and a larger teaching force.

There are other noteworthy points. In by far the majority of the hospitals the training school for nurses does not extend beyond what is known as the hospital wards—that is, the wards where the mental patients are treated for some physical illness; in other words, even yet the doctors themselves, to say nothing of the nurses and the general public, have not realized the great contribution nurses can make in caring for those suffering from mental disease. In many instances the training school seems to be merely offered in order to encourage a better class of attendants to come to the hospital by calling them nurses and giving them some definite training. Some of the superintendents did not seem to discriminate between a training school for attendants and a training school for nurses, and certainly recognized no distinction between the service that might be offered by these two groups, except in respect to the care of the physically ill.

In brief, the following conclusions can be drawn from these figures and facts obtained through the questionnaire:

1. Less than two-thirds of the state hospitals in the United States have a training school for nurses, which, interpreted, means that less than two-thirds of the state hospitals give trained nursing care to the patients within their walls. Even in the hospitals that have training schools, only about one-sixth of the patients receive care from the nurses; in other words, the nurse plays a very small and unimportant part at present in caring for this large group of patients.

2. Speaking generally, the reason for this is that neither doctors, nurses, nor the public have felt the need of nurses in that branch of medical work. Nurses themselves have not been free from the general prejudice in regard to the insane.

The present status of training schools in state hospitals is as follows:

1. The importance of the position of the superintendent of nurses is not recognized. Not enough previous training and experience is required; her salary is too low; she has little or only divided authority in regard to the training school; her jurisdiction is too limited in scope, as it should include supervision of all those giving nursing care with the view to greatly increasing the number of trained nurses and decreasing the number of attendants.

2. The requirements for admission to the training schools are too low, especially as to age and education. These should correspond to the general hospital.

3. The hours are far too long. In this branch of nursing especially an eight-hour day is essential, and at least three weeks' annual vacation.

4. In most instances the curriculum is not sufficiently well rounded. This should correspond to the curriculum of general hospital training schools.

5. Less than two-thirds of the state hospitals affiliate with general hospitals. Every state hospital should affiliate with the training school of a general hospital as part of its regular course and vice versa. The general hospital training school should be ready and glad to give this cooperation.

6. The living conditions of the nurses in state hospitals is most deplorable and one of the most serious defects. In a large number of the state hospitals the nurses live off the wards of the patients, eat in the same dining room, and have little or no opportunity for recreation. Due to the difficult nature of the work, particular attention should be given to the comfort and recreation of the nurses and to the possibility of their getting entirely away from their work when off duty.

Your Committee on the Care of the Insane would recommend the following as to the next steps for this committee to take:

The formation in each state of a special committee on the care of the insane, preferably to be called a Committee on Mental Hygiene, these local committees to be formed in connection with the state nursing organization. The Committee on Mental Hygiene of the National Organization of Public Health Nursing in its 1914 report also reported the desirability of forming state committees on mental hygiene. Therefore your committee would recommend that the organization of these local committees be carried on in cooperation with this other committee on mental hygiene. It should be the duty of these state committees to know the conditions in their state relative to the nursing care of the insane. They should bend their energies to raising the standards of the training schools in their districts, and to establish training schools where these do not exist. Every possible assistance would be given them by the national committee. Such a program means education, particularly among nurses themselves, for until nurses see their opportunity they can scarcely expect the doctors and the general public to recognize it.

## THE NEW DISINFECTION

### Soap and Water Are the Best Cleansers—Experiments at Mount Sinai Disprove Alarmist Views as to Spread of Infections

The farmer's wife who refused to waste money on chemical disinfectants, and who stoutly maintained that soap, hot water, and "elbow grease" were the best of all cleansers, is justified in her opinion by a recent statement in the New York Health Department Bulletin:

"Health officials have come to learn that much of the so-called room disinfection heretofore practiced during and after infectious diseases was unnecessary, and are placing their main reliance on mechanical cleansing with soap and water, followed, if possible, by sunlight and fresh air. The manufacturers of disinfectants, on the other hand, often make alarming and misleading statements concerning the mode of spread of infectious diseases. Thus the suggestion was recently made that 'during the course of such diseases as typhoid fever the germ can be recovered without difficulty from horizontal surfaces near the bedside.' In order to test the validity of this statement and the need for the suggested action, the bacteriological division of Mount Sinai Hospital recently undertook a careful investigation, during the course of which more than forty cultures were made. The results were uniformly negative so far as the presence of a motile bacillus or any bacillus resembling the bacillus of typhoid fever was concerned."

The city of New Orleans has accepted a donation of $200,000 from Mrs. Eve Christine Dibert, widow of John Dibert, millionaire lumber manufacturer, for the erection and maintenance of a tuberculosis hospital as a memorial to her late husband. Fifty thousand dollars will be expended on buildings, and the construction work will be started at an early date. The hospital will be established and managed by a board of trustees composed of Mrs. Dibert, Mayor Martin Behrman, Harold W. Newman, P. H. Saunders, Marcus Walker, Ernest T. George, and Charles T. Theard. An ordinance obligating the city to appropriate $10,000 annually toward the maintenance of the institution has been passed.

# DISPENSARY AND OUT-PATIENT WORK

Conducted by MICHAEL M. DAVIS, Jr.,
*Director of the Boston Dispensary.*

Please address items of news and inquiries regarding Dispensary and Out-Patient Work to the editor of this department, 25 Bennett street, Boston, Mass.

## Pay Clinics—A New Departure in a Great Hospital

Dr. S. S. Goldwater, superintendent of Mt. Sinai Hospital, New York, has proposed to his trustees the establishment of a system of pay clinics to be conducted in the out-patient department of Mt. Sinai Hospital. The following plan is tentative, and has already been the basis of much discussion in medical and in lay circles in New York city. It is printed in this department of THE MODERN HOSPITAL in order to bring it to the attention of hospital authorities in other cities and stimulate discussion. Its importance will be recognized by all, whether off-hand opinions be favorable or otherwise.

TENTATIVE PLAN FOR A PROPOSED "CLINIC FOR PAYING PATIENTS," TO BE CONDUCTED BY THE MT. SINAI HOSPITAL OF NEW YORK BY ARRANGEMENT WITH A GROUP OF SPECIALISTS.

The clinic will be established in the belief that there exists in this city a need for pay clinics, where ambulant patients who do not seek and who are not entitled to free advice and treatment may, with confidence, consult reliable specialists, without being called on to pay such office fees as prevail among recognized specialists in this city and as are beyond the means of the patients of the class referred to.

(Incidental to the inauguration of clinics in certain special branches of medicine and surgery, it is proposed to undertake the organization of a department for the prevention of disease. The method to be followed in this department will be that of the periodic examination of individuals for the early detection of morbid tendencies, with a view to the prevention or postponement of constitutional disorders.)

The clinic will endeavor to confine its aid to persons having incomes of $1,200 per annum or less.

Patients requiring hospital care will be directed to hospitals as paying patients (not necessarily for admission to private rooms, since the means of the class which the clinic aims to reach will, as a rule, be insufficient to meet private room charges).

Patients will be admitted to the clinic on weekdays from 7:30 to 9:00 p. m.

There will be a registrar, whose duty it will be to receive applicants, to reject persons not eligible for treatment, to keep the social, financial, and business records of the clinic, and to collect and account for all fees.

The receipts of the clinic shall be first applied to defray the administrative expenses of the clinics (Mt. Sinai Hospital contributes the use of the dispensary building, but not the special maintenance costs directly arising from its use by the clinic for paying patients).

All surplus earnings shall be divided among the members of the medical staff in proportion to their hours of attendance.

The standard fee for routine or office consultation in the clinics will be $1.

Medicines may be prescribed, but will not be furnished by the clinic. Prescriptions are to be given to patients to be filled elsewhere, as in private practice.

Besides treating patients who come to the clinic of their own accord, or who may be referred by physicians for routine examination and treatment, the members of the staff will be prepared to see patients at the clinic, in consultation with general practitioners. It is presumed that cases presented in this way will be such as require unusually careful and complete examinations; the fees to be charged for this consultation work will, therefore, be higher than the regular fee of $1 for routine examinations, and may be arranged between the practitioner presenting the case and the clinic physician consulted; such special fees should ordinarily be not less than $2 nor more than $3, and in no case should they exceed $5. Fees so earned are to be credited to clinic receipts.

The equipment of the Mt. Sinai Hospital dispensary (day clinics) will be placed at the disposal of the pay clinic. If the pay clinic prospers, special and exclusive equipment may be purchased later. The cost of such special equipment shall be defrayed out of the earnings of the clinic, each department to pay its own way.

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## Pay Clinics in Brooklyn Hospital[1]

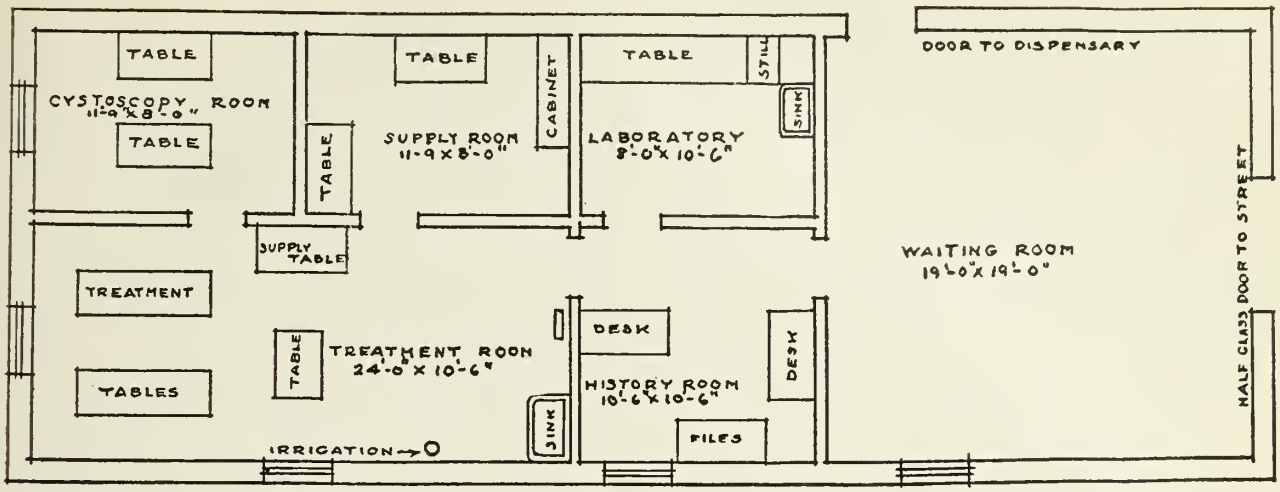
I shall outline in a general way our experience at the Brooklyn Hospital Dispensary with our genitourinary pay clinic, the first of its kind to be established in Greater New York. We can claim no originality for the idea, having but followed in the footsteps of that most progressive dispensary executive, Mr. Michael M. Davis, Jr., of Boston.

In starting our pay clinic, the Brooklyn Hospital board was actuated chiefly by two motives—first, to increase the efficiency of the dispensary as a plant; second, to do, in a broader way, medical work among a class of society which is spreading disease in the community and being exploited by the quack.

The average dispensary, considered as a business plant or human repair shop, is run on a most unbusinesslike basis. What manufacturer with a factory and equipment worth $150,000, which is the capital value of our new dispensary, would operate it from two to three hours a day, or from 20 to 30 percent of its possible efficiency? To overcome this condition and make our plant yield larger dividends in social welfare, we decided, as an experiment, to open an evening pay clinic, and selected the genitourinary department as the logical starting point. The idea met with a most enthusiastic reception from the genitourinary staff. Naturally, some criticisms and objections based on medical ethics and policy had to be met and overcome, but these were not serious and our clinic was opened August 1, 1915.

Our dispensary quarters are adequate. We have a large waiting room, with a separate street entrance, a history room, cystoscopy room, and two treatment rooms. Our clinical staff consists of a chief, two chiefs of division, and ten assistants, and operates in two sections—Mondays, Wednesdays, and Fridays, and Tuesdays, Thursdays, and Saturdays—the same physicians attending both day and evening sessions. Our day clinic has been giving free

[1]This is a paper read by Mr. Neergaard before the February meeting of the Society of Sanitary and Moral Prophylaxis of New York.



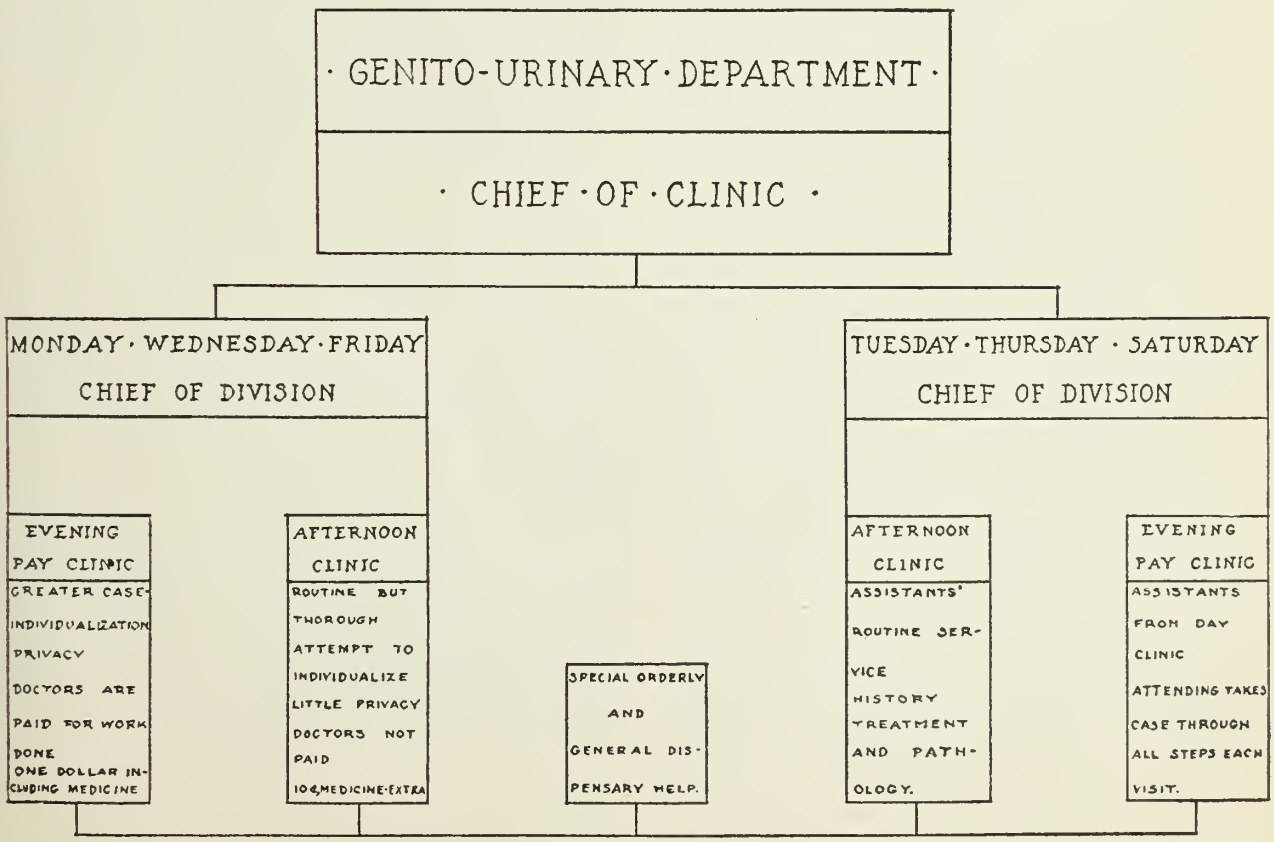

Floor plan of genitourinary department of Brooklyn Hospital Dispensary.

treatments at the rate of over 5,200 a year, 632 new patients being enrolled in 1915. We started with the theory that the free clinic would act as a feeder for the pay clinic, and that many patients receiving free treatment could afford and would pay for the greater privacy of the night clinic. In this we were not disappointed. Comparative figures from the day clinic for 1915 and 1916 show the growth, and give an index by which to estimate work for this year:

| | 1915 | 1916 |
|---|---|---|
| January | 380 | 603 |
| February | 355 | 500 |

The evening clinic for the first two months, August and September, 1915, had a total of 249 visits, while the short month of February (two holidays), 1916, showed a total of 196 visits. The average monthly increase has been 14 visits, and both clinics are beginning to receive new patients as a result of the signs already placed.

The work was successful from the start. The evening clinic is open six days a week from 5 to 6:30. The fee charged is $1 per visit, which includes drugs, excepting in cases where salvarsan is administered, where the fee is $5, which furnishes this drug practically at cost. The income, which for the six months was a little over $1,000, is divided —one-third to each physician and one-third to the institution. As the clinic grows and more members are added to the night staff, the hospital will continue to count as one and the division will be one-fourth or one-fifth, etc.


· GENITO-URINARY · DEPARTMENT ·
· CHIEF · OF · CLINIC ·
MONDAY · WEDNESDAY · FRIDAY
CHIEF OF DIVISION
TUESDAY · THURSDAY · SATURDAY
CHIEF OF DIVISION
EVENING PAY CLINIC
GREATER CASE-INDIVIDUALIZATION PRIVACY
DOCTORS ARE PAID FOR WORK DONE
ONE DOLLAR INCLUDING MEDICINE
AFTERNOON CLINIC
ROUTINE BUT THOROUGH ATTEMPT TO INDIVIDUALIZE
LITTLE PRIVACY
DOCTORS NOT PAID
10¢ MEDICINE-EXTRA
SPECIAL ORDERLY AND GENERAL DISPENSARY HELP.
AFTERNOON CLINIC
ASSISTANTS' ROUTINE SERVICE
HISTORY TREATMENT AND PATHOLOGY.
EVENING PAY CLINIC
ASSISTANTS FROM DAY CLINIC
ATTENDING TAKES CASE THROUGH ALL STEPS EACH VISIT.

Scheme of organization of genitourinary department of Brooklyn Hospital Dispensary.

Our next step is somewhat radical—the active advertising of our work. In this we feel that we will accomplish an additional public benefit by seriously curtailing the business of the quack doctor and drug stores which advertise and sell nostrums and specifics; cooperating with the department of health, the Committee of Fourteen and through them, reaching the brewers' association and retail liquor dealers' association, we have received authority to remove the signs advertising the quack doctors and patent medicines from saloon wash rooms and replace them with signs offering the treatment facilities of the Brooklyn Hospital Dispensary free and pay clinics, and the advice and diagnostic service of the Department of Health venereal clinic. Since the middle of January, 67 saloons have been visted and signs placed in 50; 30 of these saloons had no quack signs and 37 had a total of 182, which were removed. This work is now being done, and we look for a large increase of attendance as a result.

On the walls of our waiting room are hung a large and varied exhibit of the alluring signs of the advertising doctors and of many specifics for self-treatment which are guaranteed to work impossible cures in incredibly short periods of time. This display is bound to have a strong psychological effect on our patients, who will go out and spread the gospel of our work.

The harm done by these advertising specialists largely influenced our board to open the pay genitourinary clinic. We made an investigation in our free clinic, and found that more than 80 percent of the patients acknowledged that they had spent their money in vain with quacks and on nostrums, and came to our clinic as a last resort. We feel that by fighting fire with fire, and doing the same sort of advertising that has brought business to the quacks, we shall turn large sums of money from waste to effective results.

In addition to this campaign, we are planning to interest the owners of the 400 factories in our neighborhood to allow us to put our signs in their men's wash rooms.[1] We are encouraged to believe that, from the thousands of men in our city suffering from venereal diseases, we shall be able to increase the work of our dispensary to large proportions. Our chief of staff prophesies that in the not distant future the genitourinary department will operate a continuous clinic from 9 a. m. to 9 p. m., and I am inclined to agree with him as to this possibility.

To the dispensary staff the pay clinic is naturally a source of great encouragement. It affords another step of promotion between the monotonous work of the free clinic and appointment to the inside hospital staff. It offers the ambitious medical man some small monetary compensation for the time he gives to the charity work of the free clinic. This compensation should grow to fair proportions as the patients increase in number. This new element in the dispensary will insure more loyalty, enthusiasm, and regularity of attendance on the part of the staff, and will naturally have a powerful effect on the efficiency of the dispensary work generally. In my experience nothing has a greater influence on building up or destroying the attendance of a clinic than the regularity or irregularity in attendance of the physician.

I wish to speak now of pay clinics in general, and as an individual rather than as a trustee of the Brooklyn Hospital. This is a subject to which I have given much thought for several years. I believe that the establishment of pay clinics in all departments of our dispensaries is both a logical step and a pressing social necessity. I think every dispensary should double its service to the community by establishing pay clinics, the income from which should be equitably divided between the institution and the attending physicians. Such a move will be both fair to the medical profession and of great advantage to the public. If the neighborhood doctor, whose business they will most affect, is giving proper services, his practice need not suffer. If he is not efficient, it will be only the old law of the survival of the fittest.

There are thousands of self-respecting families in our community whose income fails to keep pace with the rising cost of living, and whose emergency surplus, when sickness comes, is totally inadequate. Such people in the past have gone to their family physician, but now are unable to pay his fee and naturally turn elsewhere for treatment. They have two alternatives—to consult the cheap neighborhood doctor or to accept the charity of a dispensary. To the honest, intelligent, self-respecting wage-earner neither of these alternatives is satisfactory; he is not a pauper—he asks no charity, yet he naturally feels little confidence in a physician who, with a living to earn out of small fees, can give but superficial attention to each case. The result is that he seeks what he feels is the better treatment afforded by the dispensary, and pockets his pride for the sake of better service. This naturally opens the large subject of dispensary abuse. Undoubtedly this exists, but in my judgment it exists almost entirely because in our medical organization we do not offer proper economic facilities for the medical treatment of these borderline families who make up so large a proportion of our community.

In my opinion the opening of pay clinics in our medical institutions is an absolute necessity to meet the change in social and economic conditions. The pay clinic of the genitourinary department of the Brooklyn Hospital Dispensary has already demonstrated that great possibilities exist in the idea. The members of our board and medical staff will gladly give such information and aid as our experience affords to other institutions which may consider adopting a similar policy.

The following letter was sent to 400 factory operators in the neighborhood of our dispensary:

Dear Sir:

We are doing some special work in our dispensary which is of interest to you as an employer of labor, and in which we want your cooperation.

At one time or another over 60 percent of working men are infected with venereal diseases. These seriously impair a man's efficiency by reducing his strength and nervous energy. They are highly contagious and hard to cure. The patient is usually ashamed to consult his family or factory physician, and consults an advertising quack, whose expensive treatment does more harm than good. Our dispensary conducts a daily clinic for such diseases in charge of specialists—a free clinic from 12 to 2 p. m. and a pay clinic, $1 fee, from 5:30 to 7 p. m.

For your own interest in your men's highest efficiency as well as their health, we want you to help us make this work known to your employees. Your factory is in our ambulance district; among the 2,000 hospital and 50,000 dispensary cases treated last year were many of your men's families. Read the inclosed folder; it is of vital importance to the efficiency of your organization.

We would like to furnish you with two signs for each of your men's wash rooms—one defining the examination and diagnostic service of the department of health and one outlining the treatment facilities of the Brooklyn Hospital Clinics.

A number of factories have already installed these. We are fighting a great social evil and want you to help us.

In connection with this work, will you not consider putting us on your charity list for annual donations of 10 cents for each employee in your factory?

Our hospital is doing a work far beyond the income from its endowment, and has a large annual deficit. Inasmuch as our work reaches the families of many of your employees, we hope that you will

[1]The method employed in first bringing this matter to the attention of the industrial organizations is illustrated at the end of this article in the form of letters to employers.

consider favorably this suggestion of making a regular contribution towards its support. CHARLES F. NEERGAARD,
Chairman of Dispensary Committee.

We also gave wide publicity to our work through the following circular:

BROOKLYN HOSPITAL DISPENSARY AND MEN'S DISEASES

All classes of cases are freely treated at the Brooklyn Hospital dispensary. Special private rooms are reserved for women. Children's diseases receive particular care. Injuries of all kinds, pains, suffering, accidents, serious or slight, are alleviated or cured.

We want your cooperation in one field of its work—among your men. This involves no expense whatever on your part—only your assistance in bringing what we are doing before your employees for their own good.

One class of disease is usually left to quacks and fakirs because of the way they are contracted, and the fact that the sufferers are ashamed to go to regular practitioners, who, in turn, dislike for obvious reasons to handle such cases. These are the so-called "private diseases of men."

Statistics show that over 60 percent of the workingmen suffer, at one time or another, from these diseases. How much the pain and distress interfere and hinder the victims in their work, no one can tell. Obviously, no man can do a good day's work who is partly incapacitated by suffering.

Many hospitals refuse to handle such cases at all—others only to a limited extent. So far as we know, only one other general hospital in the whole country besides Brooklyn Hospital has attempted to grapple with this evil in such a thorough and scientific manner.

Contagious as tuberculosis, such cases should be cured, not alone for the sake of those infected, but for the good of the whole community. To allow victims to "stew in the misery of their own misdoings" is to risk infecting those who come in contact with them and things they touch. Any cut or abrasion of the skin allows the germs to enter the system, and a perfectly innocent person, by using an infected towel or drinking cup, may contract a disease—lingering, loathsome, and distressing at best—and that, with lack of care, may be fatal. Most appalling of all is the possible effect on children yet unborn, for disease and deformity often result.

Among other numerous activities, Brooklyn Hospital maintains two special clinics to handle these diseases. Its experts are working in the closest relations with the board of health for the general welfare. Over 70 percent of the cases coming into our clinic have spent all of their money with some quack, whose treatments were valueless and usually did harm.

A free clinic for men's diseases (where a nominal charge of 10 cents is made for treatment) is held daily, except Sundays, from 12 to 1:30 p. m. A pay clinic, where $1 is charged for treatment and medicine, is held daily, except Sundays, from 5 to 6:30 p. m.

Cases are followed up. When a patient stops coming before he is cured, communication is had with him to find out if he is neglecting himself and why, and measures taken to complete the cure.

All that we ask of you in this connection is that your company will assist us in bringing these clinics to the attention of the men. This can be done through putting printed slips describing our work in pay roll envelopes, passing the word along through the superintendents and foremen, and placing our small signs, which will be furnished free, in the men's toilets. CHARLES F. NEERGAARD,
Chairman Dispensary Committee, Brooklyn Hospital.

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A. W. Farlinger, a capitalist of Atlanta, Ga., is erecting in that city a four-story fireproof building, 70 by 85 feet, specially designed as a home for nurses. The structure will have two basements and a roof garden. The first floor will be divided into administration offices, a large sitting room, an assembly room, five private parlors, a spacious cafe, baths, and a lobby. On the three floors above the ground floor will be built fifty-seven dormitories and twenty-seven baths with showers. A number of the rooms will have private baths. One hundred and five nurses will be accommodated. A part of the first and second basements will be devoted to a swimming pool and a large gymnasium. Locker rooms, with shower baths attached, will also occupy the first basement, and the remainder of the first and second basements will be devoted to installation of boilers, heating plant, and storage rooms. The building has been leased for ten years to the Atlanta Registered Nurses' Club.

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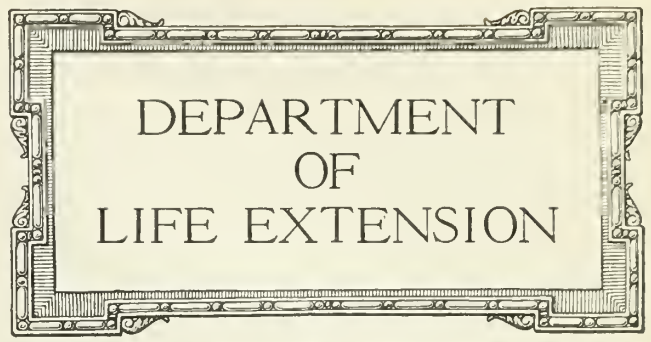
Miss Avis Ring, who has been in social service work since her graduation from the University of Wisconsin in 1913, has lately been placed in charge of the social service department of the Milwaukee Maternity Hospital.




## The New Hygiene—Objective Lesson Method

BY C. WARD CRAMPTON, M. D., New York,
Director Department of Physical Training.

The Department of Physical Training of the Board of Education, New York city, has broad duties with reference to the health and neuromuscular education of the 700,000 pupils in the public schools. It has three correlated subdepartments: 1, physical training, which provides exercise for all children in all boroughs in every school; 2, hygiene, under assistant directors of educational hygiene, charged with inspection, investigation, and supervision of all matters relating to health of pupils and teachers; 3, athletics, which seeks to provide after-school play, athletics, and folk-dancing for all the boys and girls. Viewed from the standpoint of health (aside from its work in investigation), its purpose may be stated as follows:

By hygiene we mean today the work of civilization for its own protection and maintenance in matters of health. When bodies of men became grouped and lived together, the necessity for regulation in sanitary matters was first realized. When the progress of civilization and concentration of population in towns and cities became rapid, health conserving instincts alone became inadequate, and knowledge gained from experience was required to supplement and correct its archaic principles. The maintenance of individual and community health became the necessary concern of the individual and of men set apart by the community in a natural division of labor for the purpose of health protection and maintenance. There was first established an organization for the cure of disease, next the more modern endeavor to prevent disease, and, lastly, we find society endeavoring not only to cure and prevent disease, but to so care for its members that bodily vigor may be the common possession of all. It is not enough to prevent actual disease; the lower grades of depression, inefficiency, and relative illness must give way to abounding health and vigorous living. This is the most important and pressing work of society. Our magnificent civilization is dependent on the working power of its members, and this must indeed be great for the characteristic qualities of success in present-day work—i. e., speed and accuracy are to be shown only by those of strong, sound bodies. Today we must obtain this result for the men and women of this generation, and today we must see to the children, for the responsibility of the health and physical integrity of the next generation is ours. The Chinese worship at the graves of their ancestors. Let us see to it that a debt of gratitude to the father and mother of today may be paid by their children, lest future generations rise up to curse their forefathers for a heritage of feebleness and disease.

The Board of Education is charged with the teaching of all essential matters. These include the three R's and the so-called fads—sewing, manual training, drawing, music, etc. All these are important, but it is realized that they

are information subjects, and that information perishes with the death of the individual; it is not transmitted to offspring, while strong bodies are inherited. The result of the constructive health work of the city is not limited to the present, but is handed down as an endowment to generations uncounted.

Dr. Wm. H. Maxwell, city superintendent of schools, in addressing the principals and superintendents of the schools recently, stated in effect: "Ladies and Gentlemen: You know how highly I regard the study of music, drawing, manual training, and the like, but I wish to state with all possible emphasis that the work of the schools in physical training, reading, composition, and arithmetic are by far the most important subjects and the main work of the schools. I mention physical training first because it is by all odds the most important."

The methods of the pursuance of this policy is an example of the new hygiene. The old hygiene was a method of instruction. Children were given lessons from books on anatomy, physiology, and hygiene, and then told how to care for the health on the basis of knowledge. This was all very well, but instruction started from the structure of the bones, the heart, lungs, etc., proceeded to the function of the same, and finally arrived at the care of the health; a logical method, but wasteful and ineffective, as it expected children to think as adults with full reasoning powers. Today we realize that children have bodies that must be cared for before they know the reason why.

The new hygiene has a different policy; it means the doing of things—not the mere knowing how. Ten minutes is spent in drilling the child in brushing the teeth instead of an hour on the anatomy and physiology of the tooth, and the ten minutes' work is the more effective. The child is told to *do* certain things. The authoritative command, "You wash your hands, face, and neck, and clean your finger nails, and come to school showing you have done it," is worth more than several hours' dallying instruction on the anatomy of the skin. The new hygiene gets things done and sees to it that things are *always* done, for an inspection of every child is made every day by the teacher. This goes on for eight school years, and it is fair to suppose that what is done every day for eight years will become a habit. The new hygiene is practical; it is an every-day affair instead of a book-taught theoretical subject. You will never find in our school compositions on health written with dirty hands. The greatest practical advance made by the new hygiene was introduced in the New York schools last year when the directions were given that every child should be marked on "his effort and success to put into practice the instruction received in personal hygiene." This has aroused every child and teacher and parent to an appreciation of personal cleanliness and health, for now it is marked like arithmetic and spelling.

As a New York paper has it: "That Johnny Jones shall hold up his head, breathe properly, brush his clothes, keep his muscles in condition, and be cleanly in appearance will, in fact, have about as much to do with his success and happiness in life as the things a studious youth can easily learn out of his books."

Instruction is not all based on simple cleanliness. It is realized that 25 percent of all deaths are due to tuberculosis, and antituberculosis measures must be introduced directly. First aid to the injured must be taught, and the special hygiene of the summer and winter, sunstroke, swimming, accidents, frostbite, and common colds must be known about. Above all, the instruction must become effective in the home, for the home has many in it who can be influenced by the faith of the one.

In a city not far distant is a school in an Italian neighborhood. Here the children are often sewed up in their clothes, layer by layer, as the cold weather comes on, to remain encased in them till spring comes, and they are peeled off in reverse order. The teaching of hygiene under these conditions was a difficult task and a great responsibility. The teacher bought a papier-mache doll, the size of a baby, and dressed it up with great care in appropriate under and outer clothing, with several changes of clothes. They named the doll Genevieve. Every morning she was taken out of bed and her night clothes removed; she was washed, powdered, and dried, her teeth brushed carefully, hair combed, finger nails cleaned, and dressed for the day. Every afternoon the reverse process was gone through. Soon a mother called "to find out," and sat stolidly watching the solemn process of dressing, and she examined each thread of the clothes with great care. Other mothers came, until finally Genevieve was taken home every night by a pupil to an Italian home to get American care, and teach hygiene in a dumb but effective papier-mache way. Genevieve wrought a transformation in the whole community. She became real.

The new hygiene is not only concerned with the positive establishment of habits of the care of the health; it is even more objective than that, for it gets its results in the absolute structural improvement of the body. School lessons are so arranged that mental and physical rest are given by change of occupation. The day's work is punctuated by "two-minute drills" as a tonic to relaxed muscles, and for the refreshment of heart and lungs a period of vigorous exercise is given every day; in the latter, each part of the body is given its work and harmonious development is assured. Athletics, play, and folk dances give the additional stimulus of enjoyment to these exercises, and healthful work is pursued in the guise of fun.

Should the new hygiene develop to the extent of its promise and intent, health should become a habit for every child. Preventable disease (such as tuberculosis) will be an impossibility. The children of today will be sound and vigorous, and the inheritance of health will insure a sturdy American for tomorrow.

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St. Luke's Hospital, Davenport, Iowa, has just closed a campaign in which more than $130,000 was raised for the purpose of building a new institution, and it is expected that finishing touches will be made to plans that are already half matured so that work can commence this spring. Miss Martha Oaks, the superintendent of the hospital, has been hoping for two or three years that she would be able to administer a new institution one of these days, but had hardly dared to hope for so cheering a result of the recent campaign, and is elated at the idea of having a hospital of which Davenport, Moline, and Rock Island can be proud. The new hospital is to be located on new ground about a mile from the heart of the city, overlooking a beautiful valley. It is expected that about 75 beds can be accommodated in the first unit of the new institution for the money just raised, the plans, however, to be made so that additional units can be built at any time and still maintain the homogeneity of the group.

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Starting less than three years ago with the determination to build an orthodox Jewish Hospital in Brooklyn through the collection of 5-cent pieces, a band of workers of the Brownsville and East New York Hospital Society, numbering less than a dozen, expect to see their hopes realized in July. With over 9,000 subscribers at 5 cents per week, the sum of $60,000 has been collected and two stories of the hospital completed with that sum. When completed, the building will have six stories and a capacity of 250 beds. A ladies' auxiliary was recently organized with the object of collecting $5,000 in pennies and has already obtained that tidy sum.

# PHILANTHROPY AND THE PUBLIC HEALTH

Conducted by THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director,
*Department of Family Welfare.*
DONALD B. ARMSTRONG, M. D., Director,
*Department of Social Welfare.*

**Please address items of news and inquiries regarding Philanthropy and the Public Health to the New York Association for Improving the Condition of the Poor, 105 East Twenty-second street, New York City.**

## Feeding New York's School Children

BY ELIZABETH M. FEE,
Supervisor New York School Lunch Committee.

### THE CHILD WHO EATS AT SCHOOL

Tony was 9 years old when one day he made the discovery that many of his classmates were getting "regular meals" in the school instead of eating sandwiches brought from home, or buying pickles, cakes, or candies from nearby pushcarts and vendors' stands. This discovery set Tony to thinking, for his own lunch which he brought with him to school usually consisted of bread and some preserved meat in the form of sliced bologna. He watched other children eating with great relish hot soup, macaroni, jam sandwiches, different kinds of puddings, sugar-coated apples, and candies. He reported his discovery to his mother, with the information which he had obtained that for two or three cents he too could have such a "regular meal." Tony now eats his noon lunch at school every day in the year that school is open. He does this both because he likes to and because he has to. Tony's home is only around the corner from the school which he attends, but that home is closed and deserted until evening, when his mother and sisters return from their work.

Some mothers have their children eat their lunches at school so as to avoid the danger of street crossings between school and home.

### THE PROBLEM AND ITS SOLUTION

In forty-seven elementary public schools such children are now able to take their noonday meals at a cost of a few pennies, for which they receive wholesome, well-cooked, and well-selected food. Failing such provision, these children would be compelled to make up their meals, as some still do for whom such school service is not yet available, partly with food brought from home and partly with articles of questionable nutritive value purchased from vendors in the streets about the schools, who have no conception of sanitary requirements and expose their wares to dust and handling.

The failure to provide a nourishing noonday meal for children accounts in part for the large percentage of malnutrition cases found by the medical inspectors in the schools. During the past year 16,181 cases of malnutrition were reported in the schools of New York city. In 1909, when the system of medical inspection was newly organized, and the first general physical examination of the children in the schools was in progress, the report that 7,249 children out of 231,081 examined were found to be malnourished startled the public and caused the press to engage in a discussion of the social and economic conditions which cause so many children to suffer from poor nourishment.

As a result of this disclosure, the New York School Lunch Committee was organized under the leadership of Miss Mabel H. Kittredge, who is still active in that capacity. The work of this committee found favor with the public, and won the approval of the school authorities. The popularity of the school lunch grew so rapidly that a large number of schools which were not so equipped requested the installation of lunch services. Eventually the committee became affiliated with the New York Association for Improving the Condition of the Poor, or a part of the Department of Social Welfare. Thus greater resources and facilities came within the control of the committee and its activities were greatly increased, being at present more than six times as extensive as they were when the committee originally took up the work.

### PRESENT STATUS

Last year the committee operated lunch services in 19 public schools, with an aggregate enrollment of almost 27,000 pupils. A total of 1,488,527 portions of food were sold to the children, the returns for which amounted to $14,885.27. This sum of money repaid the cost of the food, the committee bearing a deficit for the cost of service.

The equipment of kitchens and the various accessories are provided in part by the Board of Education. The Board of Estimate and Apportionment has voted a special bond issue of $26,000 for the equipment of school kitchens and lunch rooms. This will enable the committee to extend its service to about 60 schools.

Special types of service are operated in several schools, such as those having classes for cripples and anemic children and the school for the deaf. For the crippled children special methods are followed, having in view the children's physical needs. Milk and crackers are served to the anemic children in the morning. At the school for the deaf most of the pupils eat their lunches in school, as it is considered safer to limit their going and coming amid the street traffic, and very many come from distant parts of the city and would have to stay in school for their lunches in any event. Here full-course meals are served, with daily variations in the fare. In this school the service is self-supporting.

### THE FOODS SERVED

The daily menus in the schools vary, and the children are offered a large choice of desserts, in addition to the soup and the other staples, such as sandwiches and salads. Attention is also given to the preferences of children of different nationalities. In the Italian section Italian cooks are in charge of the school kitchens, and foods familiar to this nationality are served. In the Jewish sections Jewish cooks are employed who are familiar with the dietary regulations of the orthodox law.

Some items of food are sold at 1 cent and some at 2 cents. For 3 or 4 cents a child may buy a well-balanced meal, including sweets. Some children bring their bread from home, which allows them the expenditure of an extra penny for fruit or candy. It is compulsory that the children take either soup or a cup of cocoa.

Following is a list of some of the foods purchasable at a school lunch counter:

Soups—Lima bean, pea bean, rice and tomato, barley and potato, menestra.

Sandwiches—Jam, egg, salmon.

Salads—Potato, bean, lettuce, chicory.

Desserts—Apple tapioca, rice pudding, bread pudding, brown betty, baked apples, vanilla cakes (iced), spice cakes, fruits (apples, bananas, oranges), crackers, candy, peanuts, ice cream.

Beverage—Cocoa.

PREPARATION AND SERVICE

The food is prepared in kitchens in centrally located schools, from which it is distributed each day to the schools nearby, which are grouped with the central kitchen. In each central kitchen there is a manager in charge who is responsible to the supervisor for the ordering and storing of supplies, the quantity and quality of food served, the manner of sending it to the outside schools, and the accounting.

Fig. 1. Dishing out the portions of food. Sanitary regulations with respect to workers and surroundings are observed throughout the school lunch service.

The children desiring lunches form in line in the playground at noon. The soup kettles are conveniently placed, and the children receive a tray and spoon before the bowl of soup or cocoa is placed on the tray. The children then pass along to the penny table, on which are displayed salads, sandwiches, puddings, stewed and fresh fruit, cakes, crackers, peanuts, and candy. The "penny tables" are waited on in most cases by children who receive their luncheon in payment for their services. The cashier stands at the end of the line to receive the pennies and to check the food purchased by the children. The children in many schools sit down on comfortable benches at tables covered with oil cloth or damask. This practice of sitting down to a table comfortably and in order is valuable, as the school is in some cases the only place where the children ever sit down to eat. After the children finish eating, they carry their trays to a table in a remote corner, designated as a scraping table. The refuse is scraped into a pail, and the trays and dishes neatly stacked in piles ready to be washed.

EDUCATIONAL VALUE

The noon hour is socialized in every school where lunches are served. Under the supervision of teachers who maintain order without suppressing the natural desire of the children to relax during this recess, the children at the tables are able to enjoy their meals amid pleasant chatter and freedom of action. Proper table manners are encouraged, and along therewith also the wholesome habit of self-help.

The educational value of school lunches depends entirely on the attitude of principals and teachers. Where they are interested in advancing this valuable phase of the work, it is possible to teach the children how to buy, the proper choice of food, proper chewing, and orderliness at table.

HEALTH PROTECTION

The committee has adopted various means for the prevention of disease transmission through the lunch service. The employees of the committee are required to undergo a medical examination annually, with the cooperation of the Department of Health and Department of Education. All the food stuffs purchased by the committee must come up to certain standards fixed by the Bureau of Food Supply of the New York Association for Improving the Condition of the Poor. Members of the staff of the committee make personal inspections of the factories whose products the committee may wish to purchase before any orders are placed. In addition, the committee prefers to deal with firms whose employees are given periodic medical examinations.

Another guide which the committee follows in determining from what firms not to purchase foods are the reports of the health department of violations of sanitary regulations by manufacturers of and dealers in goods purchased by hospitals.

Fig. 2. The food is prepared in central kitchen schools, each serving a group of four or five schools.

REACHING INTO THE HOME

It frequently happens that the meagerness of a child's meals and his physical appearance, indicating insufficient nourishment, will attract the attention of a teacher or a

lunch employee in the school, with the result that an inquiry will be made at the child's home.

During the winter of 1914 I had occasion to visit perhaps sixty homes in the lower East Side in the heart of the congested Italian district. The reason for my visit was an unusual one: while supervising the work in one of the central kitchens I observed a small anemic lad who on several days took up the same position outside the door of the lunch room and watched the workers with hungry eyes.

Fig. 3. The pupils of the school for the deaf have made the lunch service entirely self-sustaining.

Fig. 4. He needs all the good food he can get, but his three cents will not buy it outside of school.

Fig. 5. Good food, plenty of time in which to eat it, lots of good cheer to go with it—a daily enjoyment for thousands of children served by the School Lunch Committee.

When I finally approached the boy he appeared so straightforward and anxious to help that I asked the principal of the school if the child might help in the lunch service. The children working with him told me afterward that the new helper didn't eat anything but soup. I thought probably he had been brought up on soup and didn't care for the other foods. About two weeks later the captain of the lunch team came to me with the story that the boy had brought a small pail to school and had put his soup in it and gone home. The following day I questioned the boy, who said his mother was sick and his brothers and sisters hungry, so he took his allotted portion of soup and bread home to share with them.

I followed up the case by visiting the home, and found an invalid mother, a brother and sister, twins, and a smaller boy. The mother had been injured in a factory fire and rendered a chronic invalid, and the father (the couple had never been married) had long since deserted the family. Through a neighborhood organization arrangements were made for the proper care of the mother, and three of the children continued at school. Funds were provided for the children's lunch in school each day. In several weeks our little fellow had developed into a different sort of boy—bright, clean, and healthy looking—and the other children had also begun to show good results from proper food. The mother, who had been a despondent, complaining sort of woman, became with medical treatment and good food a happy, smiling, patient invalid.

In many families the mothers are working either in factories or doing piece work at home, and consequently have no time to spare in preparation of lunches. If the children had not the advantage of a hot, nourishing luncheon in school, they would have to go through the entire day on merely a cup of coffee with dry bread, or several dill pickles.

The work of the School Lunch Committee is not in the nature of charity relief. The aim is to provide nourishing food to the children of the poor as well as those in comfortable circumstances at cost. Nevertheless, the lunch service has afforded opportunity to reach into the homes of indigent families who were not recipients of charity and yet deserved such assistance as it was possible to secure for them.

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### Unique Dispensary at Pasadena

The need that had been long felt in Pasadena, a city of 40,000 people, for a dispensary was supplied about four months ago by opening to the public a substantial and well-appointed building for this purpose. It was built upon grounds of the Pasadena Hospital Association, and is conducted in connection with the hospital. That it supplies a real and pressing demand is evidenced by the fact that since it was opened over 2,000 treatments have been given patients in its several departments of tuberculosis, medicine, surgery, pediatrics, eye, ear, nose and throat, and gynecology. All these are well equipped, and have the attention of members of a carefully selected dispensary staff. The dental department, which was thoroughly equipped at the expense of the Pasadena Dental Society, is about to begin its clinics, with every promise of having a large patronage.

The patients who come to the dispensary are largely from our Mexican population. Many of them are unable to pay the small fee of 10 or 15 cents charged them for treatment, but they get attention just the same. The leading dairy of the city donates all the milk and cream used for the babies, and there are no more grateful patients of the dispensary than the mothers of these little ones, who at the present time number fifteen.

# INSTITUTION LIBRARIES

Conducted by E. KATHLEEN JONES.
*Librarian McLean Hospital, Waverly, Mass.; member Institutional Libraries Committee, American Library Association.*

Please address items of news and inquiries regarding Institution Libraries to the editor of this department, McLean Hospital, Waverly, Mass.

## Minnesota School for Feeble-Minded and Colony for Epileptics, Faribault, Minn.—The Children's Library

BY MARGARET MAC LEAN, Principal.[1]

So much hand work is done by the feeble-minded, the exhibits sent out from the institution are so largely made up of hand work, and so much emphasis is placed on the value of manual and industrial work in all discussions of the training given here, that it is not to be wondered at that the visitors to the institution are surprised to find a school system with classes ranging from sense training and the kindergarten to the sixth grade, with perhaps more attention paid to music, both vocal and instrumental, than is paid in the average public school; with drawing and water-color work being done most creditably in all the grades; with physical training a part of the daily routine of the child going hand-in-hand with the manual training, which takes a serious place in the daily schedule as early as the first primary grades.

That reading is one of the subjects in which the feeble-minded delight and excel is attested by the appreciation shown of their work by a group of principals from one of our largest and best city school systems, who visited our schools not long ago, and were so delighted with the facility with which a primary class read at sight stories written by some of their number on the blackboard, that they sent to the class a large and beautiful picture to be hung on the wall of their school room. So it goes without saying that a library has been for years one of the features of this institution, very dear to the hearts of the children. But, to be accurate, I must say libraries, for the institution has more than one children's library.

In those buildings too far removed from the school training department to be easily accessible, branch libraries are established for the benefit of the children in those groups; so one will find suitable collections of books in Skinner Hall, Sunnyside, Grandview, and Walcott, as well as in the main building, where is to be found the school library proper. At present this is small, containing only 1,050-odd volumes, for it has to be kept in limited quarters —one of the rooms connecting with the principal's office. It is in charge of a librarian, who also has in her care all the text and reference books, magazines, and periodicals belonging to the school department.

If you should examine the 1,050-odd volumes, you would find books ranging from those beloved by beginners in reading to those enjoyed by reading men and women, with, quite naturally, a larger number of the stories and biographies suited to younger children than any other class, for of the 167 readers of the school library the ages run from 10 to 50 years chronologically and from 6 to 13 years mentally.

The following tables will show the number of readers divided into chronological and mental aged groups respectively:

| Chronological age | Number of readers | Chronological age | Number of readers |
|---|---|---|---|
| 10 to 15 years | 39 | 30 to 40 years | 20 |
| 15 to 20 years | 42 | 40 to 50 years | 16 |
| 20 to 30 years | 50 | | |

These same readers, considering mental age only, would tabulate as follows:

| Mental age | Number of readers | Mental age | Number of readers |
|---|---|---|---|
| 6 years | 10 | 10 years | 26 |
| 7 years | 40 | 11 years | 21 |
| 8 years | 37 | 12 years | 8 |
| 9 years | 22 | 13 years | 3 |

Story telling and the dramatization of stories are a regular feature of the school work in all grades, and it is not to be wondered at that the children form a taste for good reading and a fondness for books very early in life. This taste is fostered and encouraged by the teachers, and one of the strongest incentives to learning to read is to be able to get books from the library.

The books are issued by a regular card system, not unlike that used in any library, and to the individual child, who is solely responsible for the care of the book issued to him.

To become a reader of the library books is not a privilege easily won; some yards of red tape must be wound up before one attains that ambition, for to be a holder of a library card proves that a certain amount of erudition is possessed by its owner.

Library books are not loaned by one child to another, though there is no rule against it. The readers have found that if they are to be responsible for the condition of their books, and lose the privilege of the library if they carelessly handle and abuse them, they must restrict the use of them to themselves.

It is a well-known fact that his "library," as the children say, is the one thing that a boy will not share with his best friend. His skates, his skis, his sled, his knife, his box of fruit, his candy, his clothes off his back even, are a friend's for the asking, but his library book, never! You see something might happen to it.

For this is the way in which one can obtain the coveted library privilege: when a child has learned to read well enough to want other reading matter than that found in his regular text books, he is encouraged to go to the librarian, who has a serious and thrilling interview with the prospective reader, and he is given a card which he must have filled in. This card, if for Tom Brown in Miss Smith's school room, reads as follows:

> "This is to certify that Tom Brown reads well enough to enjoy the books in the school library.
> (Signed) MARY SMITH, Teacher."

And under this coveted recommendation we find the following:

> "I hereby promise to use the library books with care, and to return them promptly in good condition. If I fail to do so, I agree to give up the privilege of using these books until I can learn to be more careful with them.
> (Signed) TOM BROWN."

When this card is deposited with the librarian, Tom's

[1] EDITOR'S NOTE.—Children's hospitals, homes for crippled children, and schools for the feeble-minded have been somewhat neglected in our efforts to secure better conditions in the libraries of hospitals for adults. Will those in charge of such institutions please help us to remedy this neglect by sending lists of books for children to the editor of this page?

name is placed on the list of those entitled to all the privileges of the library; he may at once select a book from the shelves, and it is formally issued to him. Thereafter he may have a new book at least once a week, provided he returns, in good condition, the one previously drawn. If a book becomes torn, soiled, or defaced while in his possession, he may not place the blame on anyone else, for has he not pledged himself to be responsible for it?

It is seldom that one has to forfeit the privilege of the library, and never has a child who really enjoys his books been forced to do so the second time.

The reader may draw any book he wishes, though it is sometimes true that he will be happier in his choice if guided by the librarian. Some of the youngest readers may be attracted by the handsome binding, the cover page, or the illustrations, and a book would not be refused him, no matter what reason he had for his choice.

A number of the readers keep lists of books which their friends have enjoyed and told them about, and these they will ask for first, and show great disappointment if they are out. Of course, they want the book "all the fellows are talking about."

One feature of the library is the care of the numerous periodicals taken by the school. Many of the best educational, scientific, and literary magazines are taken. A number of these are used by teachers, or heads of departments whose work is especially considered in them. After reading them, the persons having had them return them to the library, where they are easily accessible for reference; but a large proportion of the magazines and periodicals are sent directly to the children's living rooms, to be used and enjoyed by them in their leisure hours. Many children who do not read books enjoy the pictures and pretty illustrations, but none go unread. At the end of the month all are returned to the librarian, one copy of each is filed in the library, and the balance are sent to the hospital, where the convalescents enjoy them in any way they see fit.

A list of these magazines may prove of interest to the reader, and it may serve to illustrate one phase of our work.

| Magazines | Number of copies | Magazines | Number of copies |
|---|---|---|---|
| American Boy | 6 | Modern Priscilla | 3 |
| The Craftsman | 1 | McClure's | 8 |
| Delineator | 2 | Normal Institute and Primary Plans | 1 |
| Everybody's | 6 | Primary Education | 3 |
| Etude | 1 | School Arts | 1 |
| Farmer's Wife | 12 | Something to Do | 2 |
| Harper's Bazar | 4 | School Education | 1 |
| Home Needle Work | 2 | St. Nicholas | 2 |
| Independent | 1 | Scientific American | 1 |
| Kindergarten Review | 1 | Survey | 1 |
| Kindergarten Magazine | 1 | Sunday School Times | 4 |
| Little Folks | 4 | Weekly Welcome | 20 |
| Ladies' Home Journal | 6 | What to Do | 20 |
| Manual Training | 1 | Youth's Companion | 18 |
| Mind and Body | 1 | | |

Another branch of the work in the librarian's care is the games, all kinds of which are kept on hand and issued and interchanged as needed. The children are regularly supplied with such games as dominoes, checkers, playing cards, flinch, authors, crokinole, snap, old maid, chess, etc., while bean bags, ring toss, rubber balls, base balls, and basket and foot balls are furnished in abundance.

There is no restriction on their use and enjoyment of these games, but they are taught, as far as possible, to use them with care, and making in every class one or two individuals responsible for the care of the games issued to that class has been found to be a good plan.

Still another feature of the library is the Victor and Edison records, which are kept for loaning to the various buildings. The institution owns three Victors and one Edison machine, and 225 records for these are cataloged and kept in cases, being issued as required. As with the books and the magazines, these represent the very best to be found in their line. New records are being added frequently to this collection.

Several of the children own machines, and their friends keep them supplied with a variety of records, so that there is no building that does not have an abundance of books, music, and flowers, for we have a greenhouse to add to the pleasures and refinements of life.

As to our moving picture machine, our band and orchestra concerts, our operettas, and other forms of entertainment—well, that is another story!

### Libraries in Indiana Institutions

The Committee on Libraries in State Institutions is preparing a library manual for use in the care of institutional libraries. The following is the proposed outline for this manual:

Introduction—Value of library organization in institutions.

1. Book selection and purchase. (a) Principles and aids in institution book selection, with lists of best aids for various types of institutions. (b) Suggestion for book purchase.

2. Library equipment and administration, including care of books.

3. Preparation of books for the shelves. (a) Mechanical preparation. (b) Accession record. (c) Shelf list. (d) Catalogue (if necessary). Sample sheets and cards for each step.

4. Circulation of books. Methods for various types of institutions, with sample pockets and cards.

5. Periodicals. Selection, care, and circulation.

CARRIE E. SCOTT, Organizer.

### Notes

Letters from several hospitals have been received by the editor asking advice about beginning or developing libraries in such institutions. While all such letters are answered personally and at length, it may be that there are other hospitals which would be glad of some general rules applicable to all institutions.

1. Have a trained librarian if possible; if not, put some one person in charge who can devote nearly, if not quite all, her time to buying, cataloging, classifying, and charging books, and getting them to the patients. Send such a person to your nearest public library for information about technical questions.

2. Secure a certain annual sum, from $100 to $300, or more if needed, for buying books. Get new books each month.

3. Establish confidential relations with some intelligent clerk at an up-to-date book shop; he will soon learn the sort of books you want, and will keep you informed about new publications. Remember that the hospital should receive 10 percent library discount on new books. Have books sent to you on approval, unless you rely on the book reviews of THE MODERN HOSPITAL.

4. Have a simple but efficient charging system, and make your nurses responsible for their own books and books on their wards. One hospital, which had been opposed to charging systems as savoring too much of "red tape," recently tried to round up its library, which seemed to have shrunk tremendously in numbers. It was found that over 400 volumes were missing, and a careful search failed to locate them—mostly new fiction and travels.

5. Don't think you cannot afford a library; for the sake of patients and employees, you cannot afford not to have one.

Dr. J. M. Carr is fitting up a small hospital at Escalon, Cal.

# DEPARTMENT OF DIETETICS

Conducted by MISS LULU GRAVES.
*Dietitian of Lakeside Hospital, Cleveland, Ohio.*

Please address items of news and inquiries regarding Department of Dietetics to the editor of this department, Lakeside Hospital, Cleveland, Ohio.

## The Egg Problem

The egg problem is one that must be solved every season of the year, though it is considerably less difficult to solve in the spring, so that seems the logical time to prepare for the other seasons. In the summer the freshness, or lack of freshness, of the egg must be constantly watched; in the autumn there may be a scarcity of good eggs; and in the winter we must face the problem of the storage egg. Though the trouble varies with each season, the difficulty through the entire year is to get an egg the flavor of which has not deteriorated nor been changed by some outside influence.

The shell is so porous that its contents readily evaporate; air from the outside can also penetrate this porous shell. If vegetables or some other strong-flavored articles be kept in the store room or refrigerator with eggs, their flavor may be imparted to the eggs.

In a new-laid egg the shell is filled, but as it cools the contents contract and leave an air space, usually in the large end of the egg. If this air has somewhat evaporated or is in the form of a bubble in the albumen, the contents of the shell will strike the sides when it is shaken in the hand. Contrary to popular belief, this does not always mean a bad egg; it may only mean that much air has evaporated and the egg is not fresh.

A common and fairly accurate test for the freshness of eggs is putting them into a dish of water. Fresh eggs will stay on the bottom of the dish in an almost horizontal position; but, if evaporation has taken place, they will tip. The greater the evaporation the more they will tip until the point is reached where they will float on the top of the water.

Eggs are preserved it many ways, some of which have been mentioned in a previous paper and will not be repeated here. Cold storage will keep eggs in a fairly good condition for some time *if* the proper temperature and humidity are maintained and the air is clean in the storage room, but they will surely, though slowly, deteriorate in time. Waterglass is effective in preserving eggs from contaminations through the shell, but it does not prevent development nor growth of any organism that may be in the shell, and the chick will grow as long as there is any oxygen inside the shell. After a few days this oxygen is consumed and the chick dies.

We are finding, in the use of the sterile egg, a better solution than any of these methods of preserving eggs or testing eggs. An infertile egg, if kept clean and dry, will not spoil in an average room temperature for several months. I have known of their being kept in a refrigerator for a year and still retain a good flavor.

Poultry dealers are producing these eggs more as there is more demand for them. Until recently we could not get them in large enough quantities to use them very extensively in hospitals or other institutions.

We are using them almost exclusively at Lakeside, and find them a complete solution of the egg problem. For the first time in my experience it is not necessary to be constantly watching the egg supply and every one concerned with the handling of them. Neither is it ever necessary to apologize or explain because a stale one "got by" in spite of all this vigilance, as is apt to occur, no matter how carefully the candling is done. Sterile eggs command a higher price, but they are worth it. There is no waste, and it is worth a few cents per dozen more to have eggs with just as good flavor at the last as at the first of a shipment.

It is perfectly obvious that these are always the logical eggs for storing if they can be obtained. This is just another instance of the demand creating the supply. If we are insistent enough, the poultry raisers will comply with our request and will no doubt be very glad to do so.

## Control of Some Sources of Our Food Supply

We are apt to manifest considerable faith in our dealers in regard to the way our supplies are handled in the wholesale house, during transportation, and at the local merchant's. The thoughtful buyer today, whether buying for the home or an institution, will avoid foods that are exposed to contamination from the street or in the store, o by being handled a great deal—such as unwrapped bread or meat.

Many merchants, bakers, and others dealing with food materials are maintaining most satisfactory standards of cleanliness and sanitation. They are finding that a business can be conducted much more successfully and satisfactorily in a clean and sanitary place than in one which is neither.

There is much to be done in the way of educating the employees in these places of business. To install expensive machinery, and equip a plant with all conveniences necessary for efficient service within its walls, then allow carelessness in delivery, is but an illustration of wasted effort. Many bakeries boast of their model plant and its equipment, and the superior quality of their goods, which is attributed to these model conditions, yet they send bread and rolls out unwrapped, or cakes and cookies without any protection whatever from contamination from drivers' hands or anything else with which they may come in contact; or these same goods are sold in shops where there is no cashier and the salesman handles bakery goods and money alternately. Is there anything more apt to be positively dirty than money?

The interest in clean food is no longer confined to individuals or societies for civic betterment, but business men and men who are negotiating the affairs of our city and state are also taking an active interest in the subject.

Doctor S. J. Crumbine, in an article in the January number of *The American Food Journal*, says:

"Sidewalk display of perishable food products in retail establishments has been prohibited in most of the states, the law allowing only such food articles that are necessarily peeled, pared, or cooked before being consumed to be displayed upon the sidewalk or on the store floor, provided that such articles are displayed at least eighteen inches above the sidewalk or floor. The model sanitary law also provides that all perishable foods be effectively protected by screens or coverings from the possible contamination of dust or flies.

"Meats are required to be covered in transit from the slaughtering establishments to the markets or shipping places, and only such cars are to be used for the shipping of food products as are reasonably clean,

in order that such products may not be dangerously contaminated by polluting organisms or foul odors or flavors."

In this same article Dr. Crumbine says with regard to employees:

"Physical Examination of Employees.—The one great defect in securing absolute freedom from dangerous contamination of food products is that of inability up to the present time, to require definite knowledge that all persons handling food products are free from communicable disease. It is believed that the next great reform movement in food control must be along that line. In Kansas the State Board of Health has recently secured the cooperation of the large meat packing establishments in requiring that all employees handling meats or meat products be required to pass a physical examination for communicable disease of any kind, including tuberculosis and venereal disease, before they can either find employment or be permitted to continue in the employment of these establishments.

"In 1912 the largest hotel in the city of Indianapolis put into effect a like requirement, and gradually, by the force of public opinion and the insistence of boards of health, this great desideratum in safeguarding the wholesomeness of food products is being brought about."

W. C. Wren, secretary of the Cleveland Retail Grocers' Association, in an editorial in the February number of the Cleveland *Grocer*, says:

"There being so many people engaged in the handling of food, would it not be a good thing, instead of having so many learned men continually looking into the food supply to see if the manufacturer had put over one-tenth of 1 percent of benzoate or had ground up too many turnips with the horseradish, to look into the general makeup of the handlers of food and their knowledge of food, and if found in good health, and have some ideas of sanitation and food values, and give them a certificate entitling the holders of same to enter into the business of retailing food?

"In my experience of five years as secretary of the Cleveland Retail Grocers' Association I took the most pride in keeping out of the grocery business men whom I knew to have contagious diseases.

"To illustrate: a gentleman called at the office about six months ago and asked me to assist him in getting a grocery store, and on asking him his reasons for wanting to embark into the grocery business he replied that sickness had made it impossible for him to continue in his regular trade. On looking at him closely it did not need an M. D.'s certificate to know that he was suffering from tuberculosis; and, do you know, it took me half an hour to prove to that man that the grocery business was the last thing that he should think of entering? But how many are there in that same condition entering into the food business, which, above all businesses, is the last business one with a communicative disease should be allowed to enter.

"We should recommend to the present administration the establishment of a bureau of examiners, where everyone wishing to enter into the business of handling food products should pass a medical and mental examination before being allowed to handle food, which, above all things, has its effects on the health of a community.

"The idea of spending an enormous amount of time and money looking into the healthfulness of food, and not one cent to look into who is going to handle it or where it is going to be kept, is all wrong. The very idea of letting anyone with the necessary funds enter into the business of food distribution is all wrong and should be corrected."

To quote from Doctor Carl Alsberg, in an address given more than a year ago to the Civic Federation of New York city, he put emphasis on the enforcement of laws regarding sanitary and hygienic conditions as follows:

"There is one need of control which is so vastly more important than all others that I propose to urge it alone on your consideration—it is adequate sanitary and hygienic control of food. By the sanitary and hygienic control of foods I mean the prevention of traffic in foods dangerous to health. To prevent this traffic is far more difficult than to prevent mere fraud in food products. Fraud may usually be detected by a chemical analysis. The danger to health that may lurk in a food can easily be detected in this way unless indeed the food contains some simple poison like arsenic or lead. If, however, the food be manufactured in unsanitary surroundings, or if it be the bearer of tuberculosis, typhoid, measles, or scarlet fever, this can hardly be detected. Hence, in my opinion, foods such as milk and butter, meat, fish, and shell fish, which are capable of this kind of contamination, should receive the greatest attention.

"The only safeguard against these sources of danger is inspection of the place of production and medical supervision of the workmen. It should be impossible, for example, for a dairyman with a case of typhoid in his family to ship milk. Obviously the exercise of such control of the sanitary conditions of food production is a task for the individual states. I would, therefore, urge on you to use every effort to secure such sanitary control of food production in every state. I can conceive of nothing more important. If such a sanitary control is to be established, you must clearly understand that, to be effective, it must rest on an adequate health service. Outside of our larger cities such a service is most unusual. Most small towns and rural communities are without adequate health protection. The greatest need of the country today is an adequate staff of well-trained, well-paid, full-time health officials in every county in our state. With this must go laws that are enforced for the recording of vital statistics of communicable diseases. Until all this is done, there can be no adequate sanitary control of foods. Just as long as we do nothing for the health of our country people, just so long will typhoid and similar diseases be imported into our cities."

The fact that men in such widely separated sections of the country and engaged in pursuits which differ so greatly are giving time and thought to improving the sources of our food supplies is most encouraging.

From no one should we expect greater interest or help to remedy the existing state of affairs than from the physicians and dietitians of our hospitals and other institutions caring for people not in normal health.

## Wheat Flour

BY J. A. WESENER, M. D., Chicago.

This is one of the most important food stuffs for the needs of man, and, aside from the mere fact that it makes bread when made into a dough with suitable leavening agents and subjected to the action of heat, little is known as to its quality or how it may differ in commercial and food values. The reason of this is that the process of making bread stuffs is, at the best, a haphazard method. This even applies to some of the commercial bakers.

In selecting a flour, there are several important factors involved. These factors depend on the purpose for which the flour is to be used. If it is to be used for ordinary white bread, one flour is required; if for biscuit or pastry, another type.

Flour consists of two principal parts—gluten and starch—and the relative proportions of these parts have much to do with the kind of flour and its suitableness for the purpose for which it is to be used. Gluten is protein in its nature, and the gluten of wheat flour has the property of coagulating when made into a dough with water in such a way as to form a tenacious, rubbery mass, in which the starch is mechanically suspended. When the dough is made in connection with yeast, the products of fermentation soften the gluten and fit it for expanding into a loose, porous loaf of bread when it is put in the oven and acted on by heat. The expansion is produced by the gas developed during fermentation, and by steam. The heat fixes the gluten and forms a framework for the loaf of bread. At the same time it gelatinizes the starch and fits it for digestion. In bread making the baker knows that the best results are obtained by using a flour which contains a suitable amount of gluten for his purpose. He also knows that the gluten of different flours has different qualities so far as its use in bread making is concerned, and he naturally selects flours which will produce the results which he requires.

The best flours for bread making purposes are considered to be those which are made from hard winter and spring wheats, largely because these contain a larger proportion of gluten than the soft winter wheat flours, and also for the reason that they are of such a character that they will take more water in making dough of the necessary stiffness for convenient handling in the making of the bread. For the baker's purposes, flours of this type have two advantages—they enable him to make the largest possible weight of bread from a given weight of flour, and they also are suitable for making the largest volume of

bread from a given weight of dough. This is because the gluten is sufficient in amount and of such quality that when softened by the yeast it will expand to a large extent without breaking down. For this reason the bread is not only of good volume, but has fine texture due to the elastic gluten being separated into numerous fine sheets between the little bubbles of gas which have developed. A fresh-made dough will not make a loaf of this character because the gluten is too tough and tenacious.

Soft wheat flours, which contain less gluten and gluten of a softer nature, make excellent yeast bread when properly handled, but the bread lacks volume, and the amount made from a given weight of flour is necessarily less than that made from the harder wheats.

The soft wheat flours are especially adapted for the making of biscuits and pastry, where the leavening agent is usually baking soda acted on by an acid ingredient, such as sour milk, or cream of tartar, or acid phosphate of lime. Here there is no opportunity to soften down the gluten as is done by yeast fermentation, and the soft gluten of lesser amount is better adapted to the action of the gas released from the baking soda than is that from many of the harder wheat flours. The soft wheat flours are also lighter in color than are the hard wheat flours of the same grade. During yeast fermentation the harder flours are whitened to a greater or less extent by the action of air and the products of fermentation, whereas with baking powder or sour milk and soda products there is no opportunity for such whitening to take place.

All types of wheat make several grades of flour, which vary in market value according to well-known qualities which are well understood by the miller, but are generally not understood by those who purchase and handle flours. For this reason it is the height of wisdom to obtain information from those who are familiar with these values as well as the bread-making qualities of different flours.

So far as the actual food value of flours is concerned, there is not a marked difference in them independent of the amount of water which they contain—that is, flours equally dry, but containing different proportions of gluten and starch, have substantially the same fuel value and supply the same number of calories of heat to the body. Differences in their economic value, dependent on a greater or lesser proportion of gluten or protein, is generally secondary to the suitableness for making a palatable and readily digestible article of food—that is, selection of flours is based more on the suitableness for making bread and pastry than on a strict nutritive ratio of protein to carbohydrates, for under any conditions an article which is not palatable, is not attractive to the eye, and has not the proper physical condition, cannot be a desirable food product. Moreover, bread is only one of the articles of diet, and a proper adjustment of protein and carbohydrates can most readily be supplied by a proper combination of other articles of food with bread.

[To be continued.]

Rev. Dr. Abram S. Kavanagh, the retiring superintendent of the Methodist Episcopal Hospital, Brooklyn, N. Y., was tendered a farewell reception and dinner on April 3 by the 200 nurses and other employees of the institution. Dr. Kavanagh resigned the hospital superintendency to resume ministerial work. He has been succeeded by Dr. James E. Holmes.

The new Brownsville General Hospital, Brownsville, Pa., is in operation, with Miss Jeanne Newington, formerly of Decatur, Ill., in charge as superintendent. The hospital was built at a cost of $50,000 and has a capacity of fifty patients.

# SOCIAL HYGIENE
## VENEREAL DISEASES

Conducted by WILLIAM F. SNOW, M. D.,
*General Secretary, The American Social Hygiene Association.*

Please address items of news and inquiries regarding Social Hygiene to the editor of this department, 105 West Fortieth street, New York City.

### The Venereal Disease Problem in War Times

At this time in the world's history, when able-bodied, intelligent, resourceful young men are especially in demand both in this country and in war-torn Europe, the medical and social questions of venereal diseases, low birth rates, marriage, and family life are receiving increasing attention. That widely diverse opinions are held is evidenced by the many proposals advanced, but the meager reports received from France, Great Britain, Germany, and other foreign countries show that certain fundamental measures are gaining recognition.

In Germany, for example, measures have been taken to prevent any sexual reminders in the war camps; no immoral motion pictures are allowed; no drinking places connected with dancing or vulgar exhibitions are permitted. In spite of the precautions taken, the moral situation is growing more serious. Constantly new schemes are being devised for eluding the vigilance of the officers, and venereal diseases are invaliding an increasing number of soldiers. As an illustration of the other extreme of opinion in Germany on methods of reducing venereal diseases may be stated a summary of the measures proposed by Dr. Sarason, of Berlin. This proposal contemplates: First, the frank designation of certain houses of prostitution, especially recognized for that purpose by the state authorities, exclusively controlled under municipal direction; these houses to require all men visitors as well as the inmates to be carefully examined for venereal infection on entering, and all applicants not found clean or in good health to be sent away. Second, the repeal of all measures concerning the licensing of houses of prostitution other than those under municipal direction; prostitutes to be permitted to live anywhere, but not to carry on their traffic in their homes. Third, to enforce this requirement, new legislation is proposed forbidding any man to enter a licensed prostitute's living room, and forbidding property owners to tolerate such visitors. The significant point about this proposal is that recognition should be given to the examination of all men who patronize prostitutes.

In France considerable discussion has taken place over the importance of warning the public on questions of morality and the need for suppressing printed advertisements of madams of massage parlors or of other persons, giving their receiving hours, asking for men's company for holidays, and general advertisements giving addresses or otherwise obviously soliciting; and the French League for Raising the Standards of Public Morality has arranged many lectures, particularly sending old soldiers who understand the problem to the camps and parks.

In Holland active measures against these methods of

soliciting are being enforced, the principal newspapers refusing all advertisements suspected as including immoral suggestions or not showing clearly what is wanted. Dancing "professors" whose records are not approved are finding it difficult to insert their advertisements. Advertisements concerning so-called sex diseases and their remedies are also being refused. A very general increase in the provision of facilities for dispensary and hospital treatment of venereal diseases is noticeable in reports.

In Milan announcements have appeared explaining that under the necessities of war strong measures must be demanded against free and secret prostitution. Women suspected of practicing prostitution are arrested and examined at a special dispensary.

In Belgium, under the direction of the German medical officers, attention is being given to so-called morals policing.

In Great Britain there have been many evidences of awakening of authorities and citizens to the importance of effectively grappling with this serious combination of evils.

It is significant that in all of the countries now at war the actual test of medical examination and prophylaxis alone has largely failed in spite of the discipline and the appeal of patriotism. The following English opinion against segregation, together with the quotation from the *Journal of Heredity* show the trend of public opinion in England and Germany.

"*An English Opinion Against Segregation.*—The following compact statement regarding the evils of segregated vice is made by William C. Dawson, chairman of the Education Authority, Hull, England, and member of the Council of Leeds University. It puts a strong case in a few words:

"1. The number of prostitutes living within any defined area is usually small compared with those who elude the vigilance of the authorities and refuse to live there. If segregation is intended to be a protective measure, its advantages are illusory.

"2. As a hygiene precaution it is both ineffective and unjust, as it attempts to segregate women only, leaving infected men free.

"3. It is a tacit admission by the authorities that they are either unwilling or incompetent to suppress or to eliminate vice.

"4. A vice area is a temptation to young people, who will not readily believe that practices can be prejudicial to the well-being of the community when the autborities either provide facilities themselves or permit others to provide them.

"5. A vice area attracts to it all the idle, vicious, and criminal population in a city, who prey, not on their own class, but on the law-abiding community. It is not only a 'hot-bed' of immorality, but also produces the basest kinds of criminality, such as bullies, procurers, seducers, thieves, and blackmailers.

"6. The control by tbe police of such a district, or private instructions to them to 'let it alone,' corrupts the officers concerned, and a corrupt police force with debased ideals is a peril to the liberties of tbe subject which can scarcely be exaggerated.

"7. A vice area lowers the moral tone of the whole community. The directors of companies and their shareholders, tradesmen and their employees, who make large profits on the food, wines, showy clothing, etc., supplied in such areas oppose all social reform and its advocates."

"*Race Hygiene in Germany.*—The semi-official 'Deutsche Zentralstelle für Volkswohlfahrt' held a three-days' meeting in Berlin, from October 26 to 28, 1915, with about 1,000 delegates attending. The conference was called 'Tagung für die Erhaltung und Mehrung der deutschen Volkskraft,' with the purpose to find ways and means against the evil consequences of war and modern civilization which menace the vitality of the race. The war kills the best, the bravest, the healthiest, eradicating once for all the finest strains in the race; and the city life, with all its attendances, causes a declining birth rate. The discussion was marked by a unanimity seldom seen in such a large audience. The dominating undertone was race hygiene. Whereas eugenics in America has a restrictive tendency, seeking to check the propagation of the unfit, race hygiene in Germany always was a positive conception aiming at the multiplication of the fit. Thus the conference laid much stress on everything which may elevate the birth rate of the best in the nation, but thought the introduction of sterilization of defectives or of marriage certificates untimely as yet. Simplicity in customs and mode of life, a full understanding of individual duty towards society, a high valuation of family life, inner colonization ('Back to the farm' movement), the system of one-family houses, garden cities, and chiefly the assistance of large, healthy families in every way—these were the main remedies proposed, the details of which were fully discussed, but cannot be enumerated in a short review. A standing committee representing all societies concerned is now in formation with the view to see the propositions worked out in practice."

Such information from Europe, fragmentary as it is, indicates that the public is coming more clearly to understand that medicine and morals have a common ground of interest in the prevention of syphilis and gonococcus infections.

Every effort should be made to develop the same attitude toward these diseases that is manifested toward other dangerous communicable infections—that is, one of sympathy and assistance for the individual during illness and recovery, and searching inquiry into the source of the infection and the community conditions which may have contributed to the opportunity for infection. The social ostracism often exhibited without any endeavor to deal constructively with the problem avails nothing either for medicine or morals. It is possible to deal scientifically with venereal diseases and at the same time to advocate that every individual should know that sex relations outside of marriage not only expose him to diseases which may prove disastrous to himself and others, but will unfit him for his highest efficiency in citizenship, marriage, and parenthood, and that society has a right to expect each man and woman to set for younger people an example of self-respect and self-control in accordance with the standards of moral living which the experience and suffering of past generations have developed.

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Persons admitted to the Chicago Psychopathic Hospital for relief from the drug habit will hereafter be required to remain at least thirty days. Under former arrangements, voluntary patients who called on the county for treatment could obtain release from the hospital by giving three days' notice. The change was made on the recommendation of Mrs. Gertrude Howe Britton, superintendent of the Cook County Social Service Bureau, and because it had been found that many of the drug victims who came to the hospital remained but a few days and received little benefit.

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Construction work has been started on a new fireproof home for St. Joseph's Hospital, Minot, N. D., to cost over $100,000. The building will have a total frontage of 188 feet, with wings 50 feet deep. The main structure will be 50 by 106 feet, and this part will be four stories high over a full basement. The wings will consist of three stories above the basement. The walls will be of brick, with pressed brick outside, and the joists will be of reinforced concrete or steel, with metal laths. J. C. Woodruff, of Minot, is the architect.

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Plans have been completed for a hospital to be erected at Robinson, Ill., by Drs. J. W. Carlisle, H. N. Rafferty, C. E. Price, and A. Lyman Lowe, of that place. The building will consist of three stories and basement, and will be modern throughout. Separate suites will be provided for each of the doctors and accommodations provided for twenty-five patients.

# FOREIGN CORRESPONDENCE

## In the Mediterranean War Area

### AMBULANCE TRAINS

Two ambulance trains have been provided for the conveyance of wounded men on the French railways. Each consists of sixteen vehicles, of which four are ward cars for lying-down cases, five are ordinary cars for sitting-up cases, two are kitchen cars, one is for medical appliances, one for medical officers and nurses, one for nurses, and two are brake vans. Each ward car contains thirty-six cots, there being three on each side of each compartment, arranged along the sides of the compartment, and not crosswise, as in the ordinary railway carriage in England. Patients are brought in at the ends of the carriage, and taken out through a wide door at the side. Every care has been taken to secure cleanliness; the floors are covered with oilcloth, and all the woodwork is painted white; lighting is by electricity and heating by steam. At the rear of the train is a coach with eighteen cots for infectious cases. The pharmacy car contains the medical stores and appliances, and has also a "treatment room," with operating table if urgent necessity calls for operation en route. In the staff car there is accommodation for medical officers and nurses, and in the adjoining car are accommodated twenty-eight orderlies. Every corner appears to have been utilized in the most ingenious manner in the design and construction of these ambulance trains; the one constructed, at a cost of £2,000, by the Caledonian Railway Company was visited by over 40,000 persons in Glasgow and by 25,000 persons in Edinburgh, which shows the interest taken in these matters by the general public. The Red Cross Society was benefited to the extent of an equal number of shillings, about £3,250. From the experience of Dr. Alfred Neumann it appears that surgical treatment in the way of dressing wounds can be carried out satisfactorily in a hospital train, even when traveling at 45 kilometers (28 miles) an hour. Sometimes urgent operations, such as tracheotomy and the ligature of vessels, had to be done with the train running at this speed. When wounds had been properly attended to, it was found that a rate of 60 kilometers (37 miles) an hour could be borne without much discomfort.

### AID FROM CANADA AND AUSTRALIA

The assistance given by the British dominions overseas in the care of the sick and wounded has been simply magnificent.

To begin with Canada, in France three general hospitals have been established, together with a clearing station or hospital, and various Red Cross distributing centers for hospital necessaries and comforts. No. 1 general hospital was located near Etaples (on the coast of Picardy, a few miles south of Boulogne), under Colonel Murray Maclaren, consisting of Indian tents; No. 2 hospital occupies the hotel at Le Touquet (also near Etaples), supplemented by tents on the golf links. At Orpington, in Kent, on the main line of the Southeastern & Chatham Railway, the government of Ontario purchased a site, and is erecting a hospital of 1,040 beds, primarily for the wounded of the Canadian force. At Taplow, on the Thames, the Canadian Red Cross Society have built and equipped, at a cost of £25,000, a hospital to accommodate 1,000 patients, and the people of Quebec have erected and are maintaining a hospital in Paris, known as "La Presse" Hospital. Many other hospitals have been previously either provided or subsidized by the dominion. When Sir Robert Borden visited Manchester last autumn, wishing to see the Canadians lying sick and wounded in the hospitals in that neighborhood, he found that twenty-seven Canadian soldiers were distributed in twenty-four different hospitals. Naturally, as we can all understand, they would prefer to be more in touch with each other in a hospital mainly devoted to the care of Canadians, and many petitions to this

Fig. 1. A British first aid field hospital on the Gallipoli peninsula, pitched under the shelter of an overhanging bank near the sea, with the surgeon and attendants at work dressing the wounds of a disabled soldier.

effect were forwarded to headquarters. Accordingly, the hospital at Mr. Waldorf Astor's beautiful seat, Cliveden, on the Thames, near Maidenhead, which has been organized and staffed by Canadian surgeons, is now Canadian as regards its patients. Not far from Oxford is Nuneham Court, another beautiful mansion overlooking the Thames, the residence of Mr. Lewis Harcourt, until lately secretary of state for the colonies. Here Canadian officers are cared for; also at Bearwood Park, near Reading, formerly so well known as the hospitable mansion of Mr. John Walter, proprietor of the *Times* newspaper. In the neighborhood of Folkestone also Canadian patients and convalescents are gathered together in the Shorncliffe Military Hospital, the Helena Hospital, the Moore Barracks Hospital, and at the hospital at Walmer, where the great Duke of

Wellington used to reside as Lord Warden of the Cinque Ports. Tuberculous patients are sent to the Pinewood Sanatorium, near Wokingham in Berkshire, where the open-air treatment is carried on thoroughly under most favorable conditions.

There are no less than five hospital units provided by Canada now serving with the Mediterranean expeditionary force. No. 1 stationary hospital, under Lieutenant-Colonel S. H. McKee, of Montreal; No. 3, under Colonel Casgrain, of Windsor, Ontario; and No. 5, from Queen's University, Kingston, under Lieutenant-Colonel Etherington, were sent to Egypt. No. 2 stationary hospital, under Colonel Shillington, went to the north of France; here also are No. 1 general hospital (the Harvard unit), under Colonel Murray Maclaren, and No. 3 (the McGill unit). This last general hospital is (except for the operating room) under canvas. Some of these tents are of very large size and highly decorated, being Durbar tents presented to the war office by Her Highness the Begum of Bhopal and other Indian chieftains. They are floored, double-lined with a corridor between the linings that secures warmth in winter and coolness in summer, and lighted by electricity. The king has offered Upper Lodge, Bushey Park (near Hampton Court, on the Thames) as a convalescent home for Canadian officers, and this building has been suitably furnished and adapted for the purpose by Surgeon-General

Fig. 2. Star and Garter Hotel, Richmond, now razed, and on its site a hospital is to be erected. The low building on the left is now used to accommodate disabled soldiers.

Carleton Jones, director of the Canadian medical service. It is in an ideal situation for the restoration to health of the sick and wounded.

The medical service of the Australian imperial force at first comprised three field ambulances, two general hospitals, one clearing hospital, and two stationary hospitals. The first general hospital originally consisted of 520 beds, but has since been greatly expanded. It was commanded by Lieutenant-Colonel Ramsay Smith, of Adelaide, assisted by leading practitioners and specialists of Melbourne and Brisbane. The second general hospital was staffed from Sydney and New South Wales, under Colonel Martin. The stationary hospitals were staffed by some of the best known men in Melbourne and Western Australia. All these hospitals were fully equipped in every particular. They were conveyed to Egypt in a vessel specially fitted up for the purpose, the "Kyarra," subsequently used as a hospital transport to take back invalided men to Australia. After a stay of some months in Egypt, the stationary and clearing hospitals went to Gallipoli. Subsequently, two more completely equipped general hospitals were dispatched from Australia and two hospital ships. An auxiliary hospital of 500 beds, established at Harefield Park, in Middlesex, and a similar hospital, also of 500 beds, at Epsom, have been provided by the commonwealth government.

### ST. JOHN AMBULANCE ASSOCIATION

At Etaples, on the coast of Picardy, not far from Boulogne, has been established a large hospital of 520 beds by the St. John Ambulance Association. It consists of huts raised from the ground, which is on a slope and well drained, the soil being sandy. The huts are 100 feet long and 20 feet in width, each being provided with a bath room, scullery, and sanitary annex. All the ward units are disposed in lines, parallel with a central corridor, which has at one end the kitchen and stores, and at the other the administration department. Separate dining rooms are provided for the patients, the sisters, and the medical staff; also an operation block, with two operating rooms, an x-ray department, etc. The reception block has several rooms, in one of which are four tables, and opposite each of these is a movable stretcher stand. The whole of one ambulance load can therefore be dealt with simultaneously and with great rapidity. Distinctive features are (1) its erection on piles, rendering it independent of the state of the weather; (2) easiness of communication by means of covered corridors; (3) the arrangement of the reception room; (4) perfect drainage. Probably this is the largest and most completely designed hut hospital that has ever been constructed.

### AFTER-CARE OF DISABLED SOLDIERS

The care of soldiers who have recovered from their wounds, but remain disabled from pursuing their ordinary trade or undertaking any manual labor on account of their crippled condition, is being dealt with by Queen Mary's convalescent auxiliary hospitals. To begin with, two houses, capable of accommodating 300 cases, were taken at Roehampton, near Richmond. It was necessary to find accommodation near London to insure the frequent attendance and advice of orthopedic surgeons on the staffs of London hospitals. Similar institutions have been started at Croydon for the eastern command (the military district comprising the eastern and southeastern English counties), and at Alder Hey, near Liverpool. At these centers are collected cases of stiff or deformed joints, contracted muscles, badly united fractures, etc., and here they receive treatment, either by operation, by electricity, by radiant heat, by massage, or by the use of mechanical apparatus, all being under the supervision of surgeons expert in this particular branch of practice. Artificial limbs are provided when necessary. Subsequently the well-known Star and Garter Hotel, on Richmond Hill, was acquired by the Institute of Auctioneers and Estate Agents and presented to the queen for the accommodation of paralyzed and disabled soldiers. This building, standing at the top of Richmond Hill, with the famous view of the River Thames in front, and having the delightful pasture and woodland of Richmond Park immediately to the south, was found on careful examination to be incapable of satisfactory adaptation to the purpose required. It has accordingly been demolished, and a new hospital is in course of erection on the site. The illustration (Fig. 2) shows the original building, and to the left the pavilion designed for a ball room, which remains and is used for the accommodation of the disabled soldiers referred to. Thirteen totally paralyzed men are already installed, and forty-two more are immediately expected. There will eventually be provision for 235 paralyzed patients, each having a separate room. The beds are being specially endowed, the first in memory of Nurse Edith Cavell, who was murdered in Belgium.

A Retired Army Officer.

# LETTERS TO THE EDITOR

## "Middle Class" Hospital Patients

To the Editor of THE MODERN HOSPITAL:

In a recent issue of THE MODERN HOSPITAL appeared an editorial signed by Dr. F. A. Washburn outlining a scheme which is to be put into effect at the Massachusetts General Hospital in an endeavor to solve the problem of better medical care for the middle class. This editorial greatly interested me because I firmly believe that a solution of this difficulty will prove of infinite good to the class of people it is aimed to serve, and also to prevent to a large extent the abuse of free out-department clinics.

During December, 1915, an opportunity was offered me to address the Orleans Parish Medical Society on the subject of abuse of charity from the standpoint of hospital management, and in my fifteen-minute paper, without being able to go into much detail, I advocated the establishment of pay clinics.

While Dr. Washburn's aim appears to be to enable private patients in medium circumstances to obtain the benefit of consultations of experts, my paper deals with the subject more from the standpoint of free clinic patients, but of the same class. I think a discussion of this very important subject would prove extremely useful to many other hospital superintendents as well as myself.

A. B. TIPPING,
Superintendent Touro Infirmary, New Orleans, La.

## Pupil Nurses for Special Hospitals

To the Editor of THE MODERN HOSPITAL:

I am taking the liberty of writing you in regard to a matter which concerns us greatly at the Magee Hospital. I refer to the difficulty which we are having in securing pupil nurses in sufficient numbers and of the right kind. From what I learn, special hospitals everywhere are meeting with this same difficulty. It occurs to me that a discussion of this subject in the columns of your valuable paper would be most helpful.

The Magee Hospital is the most modern and the most completely equipped maternity hospital in the country, and I believe also the best adapted for teaching purposes. The hospital is affiliated with the medical school of the University of Pittsburgh, and the hospital teaching is in charge of full-time university instructors and of head nurses especially trained in obstetric nursing. In the combined clinics of the hospital and out-patient department we are caring for about 1,500 confinements a year, available for teaching purposes. Unusual opportunities are thus offered nurses to secure training in this important branch of medicine. In Pennsylvania and elsewhere throughout the country hundreds of nurses are graduated each year with little or no training in obstetrics. It does seem that some way should be found to give these nurses the training which they so much need, and which is to be found only in such institutions as the Magee Hospital.

CHAS. EDW. ZIEGLER, M. D.,
Medical Director Elizabeth Steel McGee Hospital, Pittsburg, Pa.

## More Good Autopsy Figures

To the Editor of THE MODERN HOSPITAL:

In commenting editorially[1] on the fact that one hospital in America has been successful in obtaining permission for post-mortem examination in 58.5 percent of patients dying in the hospital, you state that this figure is not approached by any other hospital in this country.

I should like to call your attention to the fact that since the Robert Breck Brigham Hospital, of Boston, opened on April 1, 1914, complete autopsies have been carried out on 70 percent of all those dying (35 autopsies in 50 deaths). The figure for 1914 is 74 percent (14 out of 19 cases); that for 1916 so far, 100 percent (4 cases).

To compare these figures with those given by you for other hospitals:

| | Percent |
|---|---|
| Robert Breck Bingham Hospital, Boston | 70.0 |
| Peter Bent Brigham Hospital, Boston | 58.5 |
| Johns Hopkins Hospital, Baltimore, one year reached | 62.6 |
| University of California, San Francisco | 56.8 |
| Presbyterian Hospital, New York | 24.8 |
| New York Hospital, New York | 20.6 |
| Boston City Hospital, Boston | 14.7 |
| St. Luke's Hospital, New York | 14.4 |
| Bellevue Hospital, New York | 11.8 |
| Mount Sinai Hospital, New York | 7.3 |

A report of the scientific work of the Robert B. Brigham Hospital is soon to be published, and I do not wish to anticipate that report by commenting on the foregoing figures.

FRANCIS H. MCCRUDDEN.

[1] Autopsies Increase in Number. THE MODERN HOSPITAL, March, 1916, page 187.

## Value of the Nurse-Anesthetist

BUREAU OF MEDICAL EDUCATION AND LICENSURE,
COMMONWEALTH OF PENNSYLVANIA.
Philadelphia, March 15, 1916.

To the Editor of THE MODERN HOSPITAL:

In your November, 1915, issue, on page 376, is a communication signed "Surgical Nurse" in regard to nurses as anesthetists, in which you rather discourage the employment of full-paid nurse anesthetics in small institutions because there is not enough work in the giving of anesthesia to keep them busy, and because of the cost.

Let me call your attention to the fact that such an employee in a small hospital is one of the most valuable individuals who could be placed on the staff. Her services as anesthetist can readily be combined with those of technician in the laboratory. They could also be combined with an assistantship in the x-ray department, and they could be most usefully combined with the record keeping. Small hospitals are notorious for not keeping records. If they keep any records whatever, they are not, in most instances, worth the paper on which they are written. The nurse-anesthetist could be made responsible for the records kept in the office, in the laboratory, and in the x-ray department, and she could be responsible for seeing that every department fill out its records and that they are properly filed.

If a charge be made to each private room patient for the services of this anesthetist, as should be the case, her services will cost the hospital nothing at all.

I know of no more useful individual in the whole hospital for the purpose of standardizing small hospitals than the nurse-anesthetist, with one or more of the above combinations of service.

JOHN M. BALPY.

## Control of Tuberculosis

To the Editor of THE MODERN HOSPITAL:

Referring to your editorial on County Tuberculosis Hospitals in your issue of March, 1916, I wish to commend in the main the subject-matter of that editorial, but I feel that you make a mistake in recommending that tuberculosis should be treated from the public health standpoint precisely as insanity is. It is true that both tuberculosis and insanity are public health problems, but there the similarity ceases—one is an infectious disease and the other is not.

As you well know, hospitals for the tuberculous are only a part of the attempt at control of this disease; dispensaries and visiting nurses, with supervision in the homes, being other very essential features. As you say, there are more cases of tuberculosis in thickly populated centers, particularly cities. Most cities are making pretty good attempts at the control of contagious and infectious diseases through well-organized health departments, usually operating in conjunction with isolation hospitals. As you well know, the advanced cases of tuberculosis are considered the important centers of infection to control, and it is pretty definitely demonstrated that these cases should be segregated in hospitals within reach of their homes, as otherwise it is very difficult to keep them under hospital care; and, if dispensaries and visiting nurses are to be under the control of health departments, the care of advanced cases should also be controlled by the same authority and the hospital located near that community.

Of course, for counties containing few large cities there should be hospitals, serving one or more counties, more or less centrally located, and, as the tuberculosis problem is universal, all such hospitals should receive financial assistance from municipal, county, state, and Federal governments. In some instances it might be desirable to centralize control in the state authorities or the Federal health authorities working through the local authorities.

I think your editorial was well meant, but I think it is possible it might be misread and misinterpreted.

ROBERT M. STITH,
Seattle Department of Health, in charge of tuberculosis control.

## Some Good Autopsy Figures

UNIVERSITY OF CINCINNATI, OHIO,
MIAMI COLLEGE OF MEDICINE.

To the Editor of THE MODERN HOSPITAL:

Referring to your editorial on page 187 of the March number of THE MODERN HOSPITAL, I call your attention to an extract from my annual report of the Pathologic Institute of the Cincinnati General Hospital for 1915:

"In 1914 the undertakers of Cincinnati met and agreed (most of them) that Mr. Charles O. Dhonau should be their special representative during postmorten examinations held at the hospital. Later, on the recommendation of the director, Mr. Dhonau was regularly appointed an assistant on the institute staff to have supervision of the care of the bodies, particularly with regard to their preparation for burial, and to work out new and better methods for their preservation. Mr. Dhonau has become one of the most valued assistants and advisers of the director. The result is that this hospital has greater possibilities than almost any other in the United States for intensive study of clinical cases from the anatomical standpoint. That this is extremely valuable, the clinical histories already show."

| Month | Total (deaths) | Autopsies | Percentage |
|---|---|---|---|
| January | 52 | 9 | 17.3 |
| February | 55 | 13 | 23.7 |
| March | 88 | 21 | 23.9 |
| April | 96 | 23 | 23.9 |
| May | 57 | 10 | 17.5 |
| June | 71 | 44 | 62. |
| July | 76 | 49 | 64.4 |
| August | 63 | 36 | 57.1 |
| September | 50 | 31 | 62. |
| October | 53 | 33 | 62.2 |
| November | 76 | 52 | 68.9 |
| December | 76 | 48 | 63.1 |
| Total | 813 | 369 | 45.4 |

| | Deaths | Autopsies | Percentage |
|---|---|---|---|
| First half of year | 419 | 120 | 28. |
| Second half of year | 394 | 249 | 62.9 |

| | |
|---|---|
| House autopsies | 313 |
| Coroner's autopsies under laboratory supervision | 33 |
| Coroner's autopsies | 23 |

The increase of postmortem material was increased gradually, as the table shows.

Recently I asked my assistant, Mr. Dhonau, to give me the figures for the period since our system went into effect (June 1, 1915), and he reports that between June 1, 1915, and December 31, 1915, 293 autopsies were held from a total of 465 cases, a percentage of 63.

A table for comparison, using your figures, for hospitals of the United States would therefore read as follows:

| | Percentage |
|---|---|
| Cincinnati General Hospital | 63. |
| Johns Hopkins Hospital | 62.6 |
| Peter Bent Brigham Hospital | 58.5 |
| University of California Hospital | 56.8 |
| Massachusetts General Hospital | 30.1 |
| Presbyterian Hospital, New York | 24.5 |
| New York Hospital | 20.6 |
| Boston City Hospital | 14.7 |
| St. Luke's Hospital | 14.4 |
| Bellevue Hospital | 11.8 |
| Mt. Sinai Hospital | 7.3 |

PAUL G. WOOLEY,
Director of the Pathologic Institute.

## Disinfection of Laundry Goods

To the Editor of THE MODERN HOSPITAL:

The problem of handling and disinfection of infected linen has long been a problem for every thoughtful sanatorium executive. The query of the secretary of the New Brunswick County Sanatorium, published in the March issue of THE MODERN HOSPITAL, page 229, recalls vividly my own experiences and the present solution of this problem.

The Hospital Sanatorium of the city and county of Kalamazoo, Mich., is an institution of 40 beds for tuberculosis, a smallpox pavilion, and fever hospital. The tuberculosis patients, as admitted, are largely moderately advanced and terminal cases. Because of the latter type of patients, we consider our linen, particularly bed linen, laden with infection. To disinfect properly was one of our immediate problems on opening this institution two years ago. As was at that time the popular procedure, we fumigated carefully with formaldehyd, exposing the linen and garments conscientiously to the fumes. This necessitated at least three handlings of the linen—i. e., putting in the laundry bag, hanging garments on lines for fumigation, and again sorting for the laundry. All of this was done by a nurse, as the linen was sent to the city laundry. A well-equipped laundry was finally installed in the hospital.

A few months later, on visiting a city sanatorium, I noticed that their technic was to sprinkle 5-percent carbolic on their linen before sending to a city laundry. Never satisfied that formaldehyd was effectual, I determined to "really disinfect," and bought forty pounds of carbolic acid. Tub after tub of 5-percent carbolic was made and clothes soaked overnight, and wrung out laboriously by the superintendent, so that the laundress might make a good start. Just as this technic was established, the European war sent carbolic prices skyward, and even with my lucky purchase we could not afford to use carbolic for our ever-increasing laundry.

In working out the solution of this problem, we had these points in view: (1) to disinfect linen, (2) to protect employees from infection, (3) to keep the laundry clean and free from infection, (4) to disinfect cheaply. The large sanatoriums that were visited had steam sterilizers for mattresses and linen—clearly the ideal disinfection. This being utterly impossible to acquire, we decided to limit the infection to the laundry bags. A number of bags were made, and arranged in the wards during bath hours. As the nurse or patient changes his bed linen, it is rolled up tightly and placed in the white bag—woolen underwear in a special bag, hose in another, cotton underwear and pajamas in another, etc. The nurse and patients learn the sorting order perfectly. Bags are closed and carried to the laundry. The laundress opens the bags

and empties the contents into the big washer, shaking out the contents without touching them. A hot suds at 170° (low-pressure boiler), plus steam, is turned on the clothes for thirty minutes, followed by another suds and the usual bleach, etc. The subsequent mangling or ironing of linen is considered quite adequate to complete the process of disinfection. To be sure, woolen underwear, blankets, or colored clothes cannot have the steam treatment, and herein probably lies the weak point in our armor. We feel, however, that we avoid all unnecessary contact of employees with laundry in this method. With carbolic practically unobtainable, most sanatoriums are hoarding their stock for disinfection of sputa spills, and those with any quantity of laundry could ill afford the time required by 5-percent carbolic to kill or inhibit the action of the tubercle bacillus.

All contagious linen, except that from smallpox patients (which is previously soaked in hot bichlorid solution), is washed separately, though following the same routine as described above. We do not encounter any difficulty in the attitude of employees toward the laundry work. Conducted as some sanatorium laundries are, with little thought to limiting infection, the phthisophobia of employees may be readily excused.

In conclusion, I may add for the benefit of the skeptic that linen laundered by this method compares very favorably with that of commercial laundries.

CHARLOTTE JANES GARRISON, R. N.,
Superintendent Hospital Sanatorium, Kalamazoo, Mich.

## The Survey of the Hospital

To the Editor of THE MODERN HOSPITAL:

Will hospitals be surveyed?

To many hospital managers the term "expert" suggests one of two extremes—unbounded confidence or unbounded disappointment. The one extreme is as unreasonable as the other. There are experts and experts. The greater the expert, the less apt he is to call himself an expert or to ask anyone to rely on his opinion, and the more apt he is to insist that his client shall form an independent judgment after facts are presented.

To be expert in the management of hospitals calls for qualities greater in extent and more numerous than to be expert in analyzing work undertaken, work done, work not done, and methods employed by a hospital.

Managing a hospital efficiently means that the manager must be making every day and every month the kind of analysis which efficiency experts or surveyors are occasionally called in to make. Readers of THE MODERN HOSPITAL must agree with the editorial judgment expressed in the March number that the best possible surveyor of any hospital is the hospital manager who knows what is expected of his hospital, what his coworkers are doing, and whether either money or knowledge is wasted.

Because the human mind seeks routine and ruts, and because hospital managers live so close to their job that they lose sight of the woods for the trees, it is found helpful to bring in from the outside new pairs of eyes, new questions, disinterested analysis, and frank criticism.

American hospitals will be surveyed for the same reason that American colleges will be surveyed, and for the same reason that American cities and American states are being surveyed.

Hospitals need money; this need is becoming more urgent every year. Yet hospitals have more competition every year from other hospitals and from other appealing agencies. Givers are getting "gun shy." This is true, whether givers are wealthy private citizens or the tax-paying public. Those who have money and interest to give to hospitals are not satisfied with what the person on the inside thinks about his hospital or what his board thinks about it. They want to know how the hospital ranks with efficient hospitals in the same city or other cities. They want to know how its work compares with its claims and with the needs of the clientele it serves.

Surveys, or efficiency studies, or expert analyses will be generally demanded as the shortest cut to answering questions that are multiplying in the minds of prospective givers. Hospital surveys will be made by insiders and also by outsiders. The more we have of self-study or auto-surveying, the more will the outsider be brought in to help hospitals see themselves in terms of the outside world to which they appeal for funds and from which their patients come.

No one will be more keen to call for outside testing than those hospital managers who have exhausted their own powers and, to the best of their knowledge, have nothing to gain from outside study. If any hospital has received absurd advice from a so-called efficiency expert, it is because the wrong expert was brought in and the wrong conception of efficiency employed.

A certain city paid $1,300 to two "insiders" of national and international reputation for a study of its health department. In return that city got a report not worth, for practical purposes, 1,300 cents. Later an "outsider," totally inexpert in health administration, totally unacquainted with hospital management, but skilled in breaking up questions into their component parts, skilled in personal relations and in the art of drawing out from insiders their definition of their program and their obstacles, made a brief survey, secured cooperation from the first day, and effected a 100-percent reorganization of that department to the profound satisfaction of insiders and outsiders alike.

In health management, Dr. S. S. Goldwater, a hospital superintendent, was a "rank outsider" when he became health commissioner of Greater New York. Yet, when in the history of municipal sanitation has so much happened in so short a time to make insiders thrill with their opportunity and rise to efficiency standards of vision and achievement as during Dr. Goldwater's eighteen months?

From the standpoint of hospital management, Health Officer Goler, of Rochester, might technically be considered an outsider. Yet, does the hospital exist which under Dr. Goler's leadership would fail to become a radiating center of planning, teaching, and constructing along hospital lines?

While it is true, as THE MODERN HOSPITAL states, that "the product turned out of the modern hospital is health," it is also true that there are many other products—such as heat, light, cubic air space, motion of air, diet, food waste, cleanliness, personal service, examinations, transfers—every one of which can be located, measured, and tested as to satisfactoriness. Not one of these products can, in justice to patients, be neglected. With respect to which one of them dare any hospital in the country openly avow its satisfaction with a 50-percent or 70-percent rate? With regard to which will any hospital manager say he is satisfied with "fair" rather than with "correct?"

By asking the right questions about the plans for Bellevue Hospital, Dr. Goldwater was able to save over $1,000,000 on one division alone. By asking the right questions about ice, Mayor Mitchell, when commissioner of accounts, discovered short weights and other waste. By asking the right questions about bandages, Dr. Brannon found a bandage unit entirely satisfactory to sur-

geons, which saved over $150 a week. Asking the right questions about what happened to soldiers and the different kinds of treatment, bandage, and antiseptic solution, has revolutionized surgery not only in the trenches, but in the hospitals. Oftentimes it is easier to see a principle when applied to others, on the theory of the Irishman who was glad to enlist all his wife's relatives in the war.

This question of hospital tests finds analogy in several other fields. If school work were cited, hospital insiders might feel that school work in its character lends itself to definite testing in ways not applicable to hospital service. Between the work of a librarian and the work of a nurse there seem enough points in common to justify mentioning report forms used by Miss Hazeltine, perceptor of the Wisconsin Library School, which will soon find counterparts in hospital work generally. Just as nurses are sent out into different hospital wards for different kinds of work, or sent to a maternity hospital, or here and there into field service as part of their training, so Miss Hazeltine has arranged for city librarians throughout Wisconsin to take as apprentices library students. What kind of information does the person at headquarters responsible for certificating a nurse or a librarian need before staking the reputation of a library or a hospital? You know how vague and indefinite is the information usually recorded about high grades of personal service. Miss Hazeltine felt the need of something more specific, because, when we deal with generally worded credentials, all nurses or all librarians look about alike. Excellences are used to offset deficiencies. Two persons of identical averages in percents or even in terms like "fair" will, on closer examination and testing, disclose notable weaknesses or at least notable difficulties.

The personality points of the Wisconsin Library School are noted under fourteen heads. Please observe that for each, four different degrees are offered for marking:

| | | | | |
|---|---|---|---|---|
| Enthusiastic | very | moderately | little | lacking. |
| Sympathetic | very | moderately | little | harsh. |
| Even tempered | always | fairly | not very | irritable. |
| Tactful | very | fairly | not very | blundering. |
| Adaptable | very | moderately | not very | inflexible. |
| Sense of humor | much | moderately | little | unduly serious. |
| Resourceful | very | moderately | not very | dependent. |
| Industrious | very | moderately | not very | indolent. |
| Dignified | always | moderately | not very | undignified. |
| Personal neatness (dress, etc.) | very | moderately | not very | slovenly. |
| Courteous | always | generally | not very | discourteous. |
| Manners | gracious | fairly | common | rude or boisterous. |
| Winning (appeals to adults) | very | fairly | not very | antagonizing. |
| Winning (appeals to children) | very | fairly | indifferent | repelling. |

There are 14 points under "professional fitness," each again noted under four different degrees; 21 "good points that will make for student's success;" 23 "weak points that will make for student's failure," such as poor health, nervousness, blasé, forbidding appearance, bluff, talks too much, etc.

Finally, there are 21 points regarding student work, which are here listed for the suggestions they may give to managers of hospitals and training schools searching for specific tests of employees and students—charging books, slipping books, helping patrons select books, collecting fines, keeping statistics, mechanical work, accessioning, classification, cataloging, alphabeting, reference, book selection, story telling, publicity, work with schools, mending, preparation for bindery, picture work, inventory, typewriting, library hand.

Would hospital workers prefer to have their work judged on the basis of generally worded impressions or on the basis of specifically worded statements of fact, that can be checked and easily found to be either correct or incorrect? Would anyone doubt that workers specifically informed as to just what part of their work was unsatisfactory would make more progress than if told that "somehow or other, on the whole," their work was unsatisfactory?

Wm. H. Allen, M. D.,
Director, Institute for Public Service, New York.

### More About the Intern Question

To the Editor of The Modern Hospital:

The interesting article entitled, "The Intern Question—Where Lies the Trouble?" by the superintendent of Touro Infirmary, New Orleans, published in the April issue of The Modern Hospital, would indicate that some old conditions still exist to vex hospital administration.

The article referred to covers the ground so completely and satisfactorily that additional comment seems superfluous, yet some further thoughts suggested by the reading may not be amiss. The writer truthfully says: "They (the interns) must remember they are students, not in charge of patients, but in attendance on them under the instructions of their chief." Herein, doubtless, is the root of the difficulty. The interns, as a rule, do not so classify themselves, and the attendants, as a rule, do not impress this fact on them as they should. On the contrary, the average intern looks forward to his term as "house," when he will be in the actual charge of the patients on his division, and the conduct of the attendants justifies him, too frequently, in maintaining that attitude. It is a safe statement to make that a very large number of patients pass through the hospital without having received any attention or treatment by the attendant. When such facts are referred to him, the reply is elicited, "My attention was never called to them." This is undoubtedly true, and it is equally true that there are many cases which the attendant does not expect to have referred to him, and which he would regard with such indifference, if referred, as to justify the "house" in not mentioning them and in retaining the treatment in his own hands.

Of course the attendant cannot know, of his own knowledge, of the admissions to his division, but why should he not receive at each visit a detailed statement of all such admissions since his last visit? It is not sufficient that this should be merely one of the multitudinous "regulations" of the hospital. Probably the rule or its equivalent prevails in all hospitals, but it should be enforced. It should be an imperative condition of intern service, demanded by the attendant in the first instance, and every failure reported by him promptly to the hospital administration and made a matter of discipline. As a matter of fact, does the average attendant either expect or desire such reports? Would not his manner, if not his words, too often be a practical rebuke to the intern for bringing unimportant matters to his attention? And, if so, can one wonder that even a conscientious intern would hesitate in the matter, and even decide to err in the wrong direction rather than incur rebuke? And as for the intern who is not influenced by conscientious scruples, but whose aim is to secure as much "friction" as possible during his term of service, there is here ample reason for his indulging himself in that direction. He knows he will not be called to account by his attendant, even if the latter learns, by chance, that some patients whom he should have seen have slipped through the service without his knowledge.

There is, probably, no other profession or calling wherein men have grave responsibility imposed on them at so

early an age as in the case of the hospital intern. He enters on his duties young, fresh from his theoretical studies, and after a year or eighteen months he has practical charge of the patients on his division. This is not true in theory, but it is true in the actual working out of the scheme. The average attendant relies on him, as he must, to "call his attention" to what he ought to see. He does not see every patient, nor wish to. Here the matter is left to the discretion of the "house."

There are, of course, many notable exceptions to this condition among both attendants and interns, but most of those experienced in hospital work will accept the statement as made. Of course, in a business like that of a hospital, where there is so much of the emergency class, when time is an important factor and delay is impossible, the "house" must, in the nature of the case, frequently attend to matters of the utmost gravity and assume the responsibility for it; this, however, should not be done, even in such cases, without earnest efforts to find an attendant (not necessarily the particular attendant of the division to which the patient is assigned) and make a detailed report to him on the first subsequent opportunity.

There has always been an "intern question," and there always will be. The young man wants the experience. He is in the hospital service for the purpose of gaining it; otherwise it would have no attraction for him. It is quite natural that he should assume authority in many instances rather than miss it. There are those who are bumptious and combative by nature, and who will exhibit these traits in any sphere of activity. Perhaps the atmosphere of the hospital is more favorable to this growth and development than that in other lines of business, yet it is doubtful if their presence is more conspicuous there than elsewhere. Nevertheless, that they are there in altogether too frequent and troublesome quantity is undoubtedly true. But the interns, as a class, do good work. They meet their responsibilities with an alacrity and ability which is altogether commendable. The wonder is that so few mistakes are made. In criticising the system, one should not be unmindful of the very large number of individuals who rise superior to the system, and who do most excellent work in spite of it. But the responsibility for the criticism lies with the attendants. They are the immediate superior officers. The exclusive duty of the treatment of patients is theirs. The interns are their subordinates and assistants, and they should be made to understand clearly within what limits they may act independently.

GEO. P. LUDLAM,
Superintendent Emeritus The New York Hospital, New York.

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The new Noyes Memorial Hospital at St. Joseph, Mo., erected at a cost of $250,000, was opened for service April 15. Miss Florence Burt is the superintendent. The building is a four-story and basement structure, 48x140 feet, with a capacity of 125 beds. The scale of prices for accommodations has been arranged so that patients will be able to obtain beds or rooms at prices they can afford to pay, regardless of their financial condition, and no person needing hospital care will be turned away because he has no funds. All reputable physicians will be admitted to practice.

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The Maryland General Hospital, Baltimore, is abandoning the one-man administration plan. The medical affairs of the institution will hereafter be directed by one man and the business affairs by another. Dr. Elmer Newcomer, now assistant superintendent of the University Hospital, Baltimore, will be the medical superintendent, beginning June 1. Mr. William H. Dallam, formerly assistant to the purchasing agent of the Merchants and Miners' Transportation Company, has already assumed the duties of business manager.

# NEW EQUIPMENT

## A New Device for Inspecting Supplies for Hospitals

INVENTED BY H. M. FOSTER,
Examiner of Purchase and Supplies, Bureau of Contract Supervision, Board of Estimate and Apportionment, New York City.

Are we getting our money's worth? That is the question—the perpetual question in the mind of the hospital manager. He knows that his answer will be held as a test of his management by those in authority over him, and he knows that his ability to answer the question satisfactorily depends on the correctness and thoroughness of the information given him by his subordinates. If he is a good economist, it is his object to get the most and the best for the money spent for men and things. As a supervisor it is his business to correct waste, whether of effort or articles, and to improve methods of work and use. In order, then, to answer the question of money's worth, he must know all the necessary facts from those under him, and how to use such information when he gets it.

The amount of expenditure depends on the quantity and quality of what is bought. The quantity depends on the periodic consumption—that is, the proper quantity for a certain purpose for a given time. The quality depends on the purpose—that is, a given article might be right for a certain purpose, but improper for another purpose. The obtaining of the proper quality depends on knowing beforehand what is required and knowing afterward that it has been received. This knowledge depends, in turn, on proper inspection, and it is the purpose of the machine here described to afford a more thorough inspection of supplies and to reduce the time and labor formerly consumed in such work.

The modern hospital buys almost as many kinds of supplies as does a railroad or any other large commercial corporation. The kinds of supplies which can be inspected by use of this machine may conveniently be enumerated under five classifications, as follows:

| Food | Forage | Construction | Hardware | Horticulture |
|---|---|---|---|---|
| Cereals. | Barley. | Cement. | Bolts. | Bulbs. |
| Coffee. | Bran. | Gravel. | Nails. | Seeds. |
| Flour. | Corn. | Sand. | Nuts. | |
| Fruits. | Meals. | Stone. | Screws. | |
| Meals. | Oats. | | Washers. | |
| Vegetables. | Vegetables. | | | |

In fact, anything can be so inspected which is delivered in a suitable container (such as a bag, sack, barrel, keg, or box) which is not too delicate to stand the more or less rough usage of being dumped, and which must be spread out to be properly seen.

Take potatoes as an example. The present manner of inspecting potatoes is crude in method, inadequate in extent, and wasteful of time and labor. It frequently happens that potatoes, which have been accepted as satisfactory by an inspector, when they are delivered to the kitchen to be cooked are found to be decidedly unsatisfactory. The reason is that the inspector did not have an opportunity to see all the potatoes. If they were loose

in a freight car, he saw merely a large pile, and could actually inspect only those on the surface. If they were in bags or barrels, he emptied only a few of these, or perhaps he simply opened them and saw only the tops.

Suppose a truck load of 100 bags of potatoes is delivered. The truck driver throws off one bag from the tail of the truck, stands it up on its bottom end and cuts the string sewed in the top end and pulls it out. Then he

Fig. 1. The bag is placed on the dumper and its string is cut.

topples the bag over flat on the floor and a few potatoes from the top spill out. The floor on which they are spilled is not always clean enough for such use. Next, the laborer has to take hold of the bottom of the bag and pull it up until the bag is entirely emptied of its contents. A bag of potatoes weighs from 175 to 200 pounds, so that this is heavy work. The operation is repeated two or three times for two or three more bags to be emptied. If the inspector is in doubt, another and another bag must

Fig. 2. The potatoes are spread out in the tray and inspected.

be emptied until he has reached his decision. Please observe that all these bags are taken from the tail end of the truck. When 75 or 100 bags of potatoes are loaded on a truck, they are packed together so tight that it is practically impossible to pull out the bag in the center, or even bags in random places throughout the load. The knowledge on the part of the seller that, for the purpose of inspection, the bags must be taken from the tail end of the truck, offers to unscrupulous dealers the opportunity to place there potatoes of good quality and to conceal those of inferior quality elsewhere. Because of this condition, it frequently happens that fruits and vegetables are formally accepted by an inspector, as of satisfactory quality on the basis of such inspection, and later, on being used, a large portion of the remainder, which, on account of the conditions described, has not been seen by the inspector, is found to be of decidedly inferior quality.

At the average hospital there is neither time nor space, nor are adequate facilities provided, for any better means of inspection than those described above. By the machine illustrated herewith it is intended to reduce the time and labor involved, and to afford means for a thorough inspection of all, or at least a far larger portion than at present, of a delivery of such supplies. The machine is mounted on swivel wheels, similar to those used on a hospital stretcher, to allow it to be pushed about easily and in all directions.

In the case taken as an example, that of a delivery of a truck load of potatoes, the machine is wheeled up to the tail end of the truck and a bag of potatoes is easily

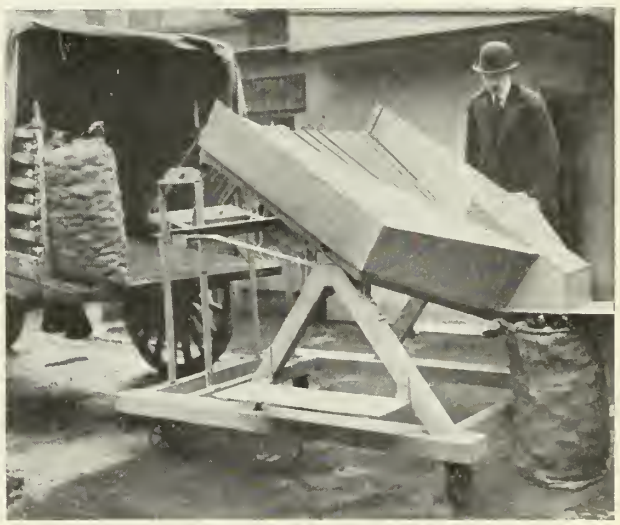

Fig. 3. The gate of the spout is drawn out and the potatoes are back in the original bag.

shoved on to the dumper. This dumper is hung on a shaft about which it revolves through the proper arc, and its floor is braced by side straps and brackets riveted to the bottom. The upright portion is intended to hold the bag in a position so that its contents will easily flow out. Ordinarily, when a bag is emptied, its upper part, as soon as a small portion of the contents has been discharged, flaps over on itself and prevents the remainder of the contents from emptying easily. By holding the bag in position by means of the upright portion of the dumper and the straps on both sides, this clogging is obviated. As soon as the bag is placed in position on the dumper, the string of the bag is cut and by a slight push it is tipped over and its contents spread out over the floor of the tray. The inspector stands upon the folding step on the side and sees the entire contents of the bag spread out before him. On reaching his decision as to quality, he pulls out a pin, which allows the tray to descend forwardly to the position shown in the illustration, and the potatoes slide down the incline to the mouth of the spout. From there, when the closing gate is lifted, the potatoes run out of the spout and fall into the original bag. The bag is held open and hung from the spout by hooks around its perimeter. The hood is intended to prevent the potatoes from spilling out or

bouncing over the top when the tray is tilted. The interior sides of the tray converge from the receiving end to the delivery end, so as to guide the potatoes into the spout.

The uprights which support the dumper may be made in two sections, the lower sections fitting into the upper, with holes in each through which pins may be inserted. The intention of this arrangement is to allow the height of the dumper from the floor to be adjusted so that the dumper may meet flush with the floor of a truck or freight car. The object of this arrangement is to avoid the labor of lifting the bag. The side platforms or steps on which the inspector stands are supported by hinged brackets. When the machine is not in use, these steps are folded up out of the way and thus take up less room. The receiving tray is balanced on its shaft as an axis, somewhat anterior to the center of gravity, and properly counterweighted at its forward end to allow the forward end to descend immediately when the holding pin is taken out. The object of this arrangement is to obviate the labor of pulling down the tray when it is loaded with potatoes. While the potatoes are being inspected, the bag from which they have just been emptied may be tossed to the forward end and fastened to the hooks around the mouth of the spout. The object of this arrangement is to obviate the necessity of having extra bags on hand. The floor of the tray is built of slats, each one tapered and rounded to facilitate sliding, and these slats allow the dirt to fall between them. Also, these slats can be fixed at varying distances apart so as to act as a sorting device for size. Undersized fruits and vegetables drop through and are discarded.

By means of an extra tray made to fit into the permanent one and having a solid floor—that is, without slats—grains can also be inspected, such as oats, corn, and even flour. Thus the entire contents of a bag can be properly inspected instead of simply a handful.

The process of inspecting supplies by use of this machine may be better explained by the accompanying illustrations than by words. The first picture shows the bag of potatoes on the dumper, with the truckman untying the bag; the second shows the potatoes spread out for inspection, and the third shows the potatoes back in the original bag.

From the foregoing description and illustrations it should be obvious that the time and labor consumed in the present method of inspecting fruits and vegetables will by this machine be reduced to a minimum. Furthermore, a far fuller knowledge of a delivery will be obtained. Instead of taking only a few bags from the tail end of a truck and depending on those for a knowledge of the whole delivery, all the bags may be inspected, or a far greater number may be thoroughly inspected in equal time. The first, eleventh, twenty-first, and so on may be taken; or the first, sixth, eleventh, and so on. In this way a thorough examination may be made of bags of potatoes throughout the whole delivery.

The practice of putting supplies of good quality where it is known they will be inspected and concealing those of inferior quality will easily be detected. "Topping" will just as easily be discovered. "Topping" is a trade term for the practice of putting supplies of good quality on the top and concealing those of inferior quality beneath. Another trick of the trade is to put a stovepipe in the middle of a barrel and pack the fruit or vegetables in so tight around it that they will retain their position when the pipe is drawn out and an empty space left in the middle, and then boards are placed across either end just far enough in from the top and bottom to allow a few layers to be packed there to conceal the hollow. This fraud will easily be revealed.

This invention was developed as a result of years of experience with the lax methods at present in use. It was made by the writer when he was an inspector of repairs and supplies in the employ of the government of the city of New York. By law an employee of the city is prevented from profiting directly or indirectly by the sale of an article to the city government, and the inventor gave permission to the city to construct as many of these machines as would be needed for its own use. This permission has been accepted by the Board of Estimate and Apportionment on behalf of the city, and the machine has been constructed and is now being used in the institutional departments which buy such supplies. It is in successful operation in the Department of Public Charities and in Bellevue and Allied Hospitals. The departments of health and correction have begun to make machines for their use and the department of street cleaning is considering making a large number for inspecting oats at its many and widely scattered stables. The machine has also been favorably commented on by the United States Department of Agriculture, by the navy, and by many large manufacturers.

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### Improved Urine Bottle Holder

The illustration shows a holder which we use in collecting 24-hour amounts of urine, and am sending it with the idea that it may be of interest to the readers of THE MODERN HOSPITAL.

With us the practice of obtaining 24-hour amounts of urine has become so general that it has proved very difficult to be sure that urines of all the patients have been correctly collected. In case the bottles are kept in the toilet rooms, there is great danger of specimens being thrown out or poured into the wrong bottle. To overcome this, we have made a five-pint bottle container as suggested

Improved urine bottle holder.

by our chemist, Dr. Willey Denis. The interesting features are as follows:

The holder, which is made of galvanized iron, is white enameled. The bottom is openwork wire, to prevent the accumulation of dust, moisture, etc. The container is hung on the side rail of the bed, and because it is white it is not conspicuous. A cork stopper is tied to the bottle to prevent loss. A small enameled iron funnel is provided with each holder. If the patient is able, he pours the urine into the bottle from his urinal; if not, this is done by the nurse.

For genitourinary cases, on constant drainage, it also makes a convenient receptacle for collected urines. The cost to us of all receptacles, unpainted, is $1.00 each.

JOSEPH B. HOWLAND,
Assistant Administrator Massachusetts General Hospital.

### A Simple Method of Giving Saline Subcutaneously and Intravenously in Use at the Royal Victoria Hospital, Montreal, Can.

In the giving of saline intravenously, there are some slight difficulties which I think could be overcome by the use of a receptacle or flask, which I shall describe later. Let us consider the drawbacks which exist in the old method of giving saline intravenously:

1. The monotonous and tiresome act of having to hold the funnel at arm's length, and the occasional overflow of same when fluid is too vigorously poured out from flask by the assistant.
2. The unequal pressure of fluid in the funnel.
3. Possibility of air getting down into the tube, due to allowing the funnel to empty itself.
4. Exposure to air and contamination.

Fig. 1. The cork removed.

The simple device, which has been worked out with the kind assistance and valuable suggestions of Miss Felter, head of the operating department of the Royal Victoria Hospital, is as follows: It is a continuous flow arrangement, which, when suspended from a stand, avoids the need of an assistant. The flask is an ordinary one (Erlenmeyer), such as is generally used in a hospital, and the cork is made of soft rubber with an adjustable screw running through it, attached to a small plate on its inner surface. This, by the use of the thumbscrew on the outside, will enable the cork to fit any ordinary sized bottle, having the same action as the plunger of a syringe.

The long tube is placed through the cork and into the flask, allowing air to enter whenever the flask is turned bottom up, thereby regulating the flow of fluid. The short bent tube on the opposite side is for the flow of fluid, and to it is attached the rubber tube, with its cannula, or needle, at the end. The advantages are as follows:

1. Doing away with the funnel and open flask arrangement.
2. No overflowing of fluid.
3. Regular pressure and uniform flow of fluid.
4. Simplicity of apparatus.

Fig. 2. The cork inserted.

5. No possibility of air getting into tube after flow has started.
6. No possibility of fluid becoming contaminated by exposure to air.
7. Easiness of sterilization.
8. (VERY IMPORTANT) No need of *assistants* after flow of fluid has started.
9. No danger of cork coming out of flask when inverted.

E. C. LEVINE, M. D.,
Clinical Assistant at the Royal Victoria Hospital.

The proposed Jasper County (Mo.) Tuberculosis Sanatorium, for which a bond issue of $100,000 was voted last fall, is to be a two-story and basement reinforced concrete structure. It will have a frontage of 250 feet and the depth of the main part will be 60 feet. Back of this there will be a projection, 40 by 50 feet, containing a laboratory, an eye, ear, nose, and throat inspection room, an x-ray and electrical room, the head nurses' quarters, and a small dining room for attendants. The kitchen will be in the basement. Pergolas extending for 125 feet will lead out from the building, and there will be a large roof garden. On the interior, ramps will be substituted for stairways. The normal capacity of the institution will be 100 beds, but provisions will be made for caring for as many as 125 patients when necessary. Rose & Peterson, of Kansas City, Kas., are the architects.

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The King's Daughters' Hospital at Perry, Ia., has a new superintendent in the person of Miss Mildred Bennington. Miss Hokanson, the former superintendent, resigned to take up surgical nursing in the Lutheran Hospital at Des Moines.

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An institution to be devoted to the treatment of tuberculosis and kindred diseases is to be established at Pocatello, Idaho, by the Intermountain Sanitarium Company, capitalized at $50,000. Drs. J. C. Arnout and H. S. Wooley are interested in the undertaking.

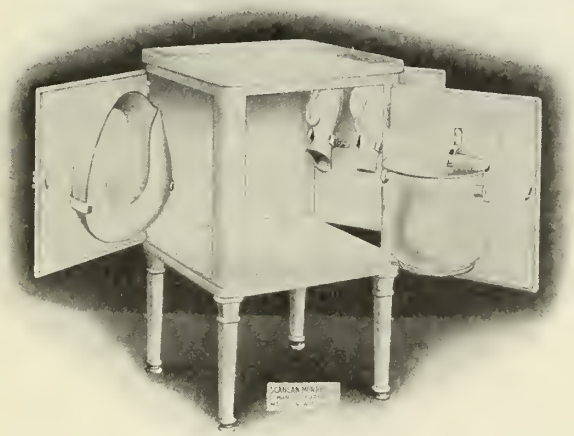
# NEW INSTRUMENTS AND APPLIANCES

VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.
Please address items of news and inquiries regarding New Instruments and Appliances to the editor of this department, 327 Southeast avenue, Oak Park, Illinois.

### Private Room Cabinet

This cabinet, neat and attractive in appearance and thoroughly sanitary, is constructed to hold a ped pan, male and female urinal, and a slop jar. The cabinet, with utensils, assures the patient of having at all times during his stay at the hospital utensils for his individual use, and in private rooms patients are beginning to demand this.

The utensils fit into nickel-plated racks attached to the



"White Line" private room cabinet.

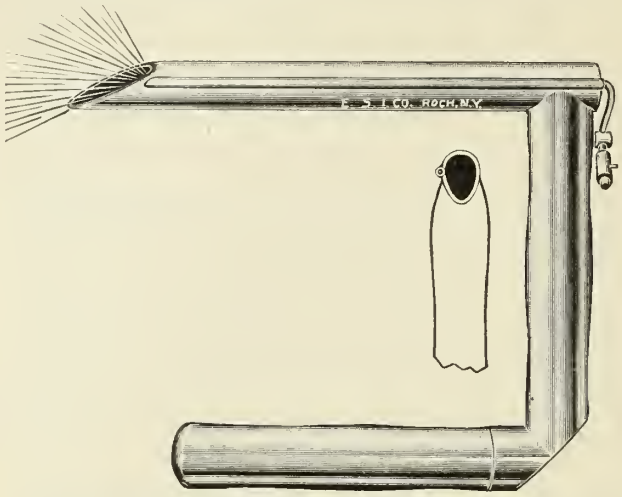
inside of each door; the doors, each swinging out, away from each other, render it easy for the nurse to get at the utensils, and, when the doors are closed, makes a very serviceable piece of furniture in the room. The top is of depressed porcelain enamel, 20x20 inches, and serves admirably as a table or wash stand. The body of the cabinet and the close-fitting doors that carry certain utensils are of steel, finished in white enamel.

### Anterior Commissure Laryngoscope

BY DR. CHEVALIER JACKSON, Pittsburg.

There is a variety of speculums on the market for examining the larynx, the trachea, and the esophagus for the removal of foreign bodies, papilloma, etc., but none of these are quite suitable for the purpose of examining or operating on the anterior commissure of the larynx. To facilitate this procedure, Dr. Jackson had a speculum constructed as shown in the illustration. This speculum is used at the side of the tongue over the dorsum, and, as this position approaches the larynx somewhat sidewise, some experience is necessary in order to at once recognize the landmarks.

This instrument is provided with an auxiliary tube for the reception of the light carrier and lamp, and the light



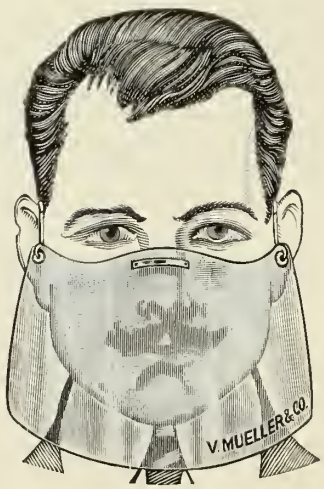
Jackson's anterior commissure laryngoscope.

shines through a fenestrum at the distal end directly on the tissues in advance. As the lamp is in a sunken chamber, instruments may be passed through the tube without the slightest danger of breaking the bulb, which has a tungsten filament, giving a brilliant light and practically no heat. The instrument does not replace the regular slide speculum for general work, but those who have had difficulty in certain cases in exposing the larynx will find such exposure feasible, even in the most difficult cases, as the heart-shaped lumen in this instrument presses the tissues away from the visual line to the anterior commissure.

### Protective Face Shield

BY DR. C. F. HEARD, Erie, Pa.

The importance of protection against infection when examining tubercular and other patients suffering from some infectious disease is now universally recognized. To afford this protection, a number of devices have been put




Heard face shield.

on the market, and one that has been mostly used is a glass plate, either supported on a pedestal or suspended from the ceiling. These glass shields are satisfactory as long as they are used only for the purpose of examination,

but they are more of a hindrance than a help as soon as any operative procedure is attempted, such as removing tonsils, papilloma of the larynx, etc. To overcome this difficulty, Dr. Heard had a mask constructed of transparent material, which is worn in the same manner as a pair of spectacles. On account of its extreme lightness, this mask can be worn for hours without causing the wearer the slightest inconvenience.

This device was presented at the meeting of the Academy of Ophthalmology and otolaryngology last fall and attracted very favorable comment.

### Water Pressure Dynamo

The water motor dynamo, operating as one unit, as shown in illustration, seems to offer suggestions for extensive use in sanatoriums and hospitals which are not supplied with electricity. Many of the smaller cities have electricity available only at night, others not at all, and a galvanic current for nerve testing, nerve stimulant, and other cases where galvanic current is indicated would often be of great help.

The comparative uncertainty of dry cells for this class of work has discouraged many physicians from installing

The M.-W. water motor and dynamo.

a battery apparatus. The outfit consists of a water motor, which is attached directly to a faucet and a direct current dynamo. This dynamo has a capacity of approximately twenty-four watts, which is ample for all ordinary purposes where a comparatively light galvanic current is desired. The extreme simplicity of the equipment and small expense of operating make it an apparatus worth considering. The manufacturers of this equipment also make a grinder, which is operated in the same manner. This might find frequent use in the hospital for sharpening knives, buffing silverware, nickel-plated instruments, etc.

### Scientific Baby-Feeder

What seems to be a rather practical device has recently been put on the market under the name of Kolb scientific baby-feeder. As will be seen from the illustrations, the device consists of an adjustable rod extending from one end of the crib or bed to the other, and is attached to the head and foot end by means of spring clamps, the upper portion of which is neatly covered. Two sliding collars are attached to this rod, from which are suspended two slings of cord, which in turn are fastened to an enameled wire cage of a size suitable to hold the regulation baby bottle. By means of an ingenious attachment on the slings it is possible to suspend the bottle at any desired angle while the baby is feeding. The cage is of a size that allows the bottle to be slipped in and out without special effort, and is also large enough so that a cover can be slipped over the bottle for the purpose of retaining the warmth if it should be felt that this is desirable.

When the bottle is once placed in the cage and put at a certain angle, it will remain there, so that the baby will always be able to find it again and feed itself. Specialists

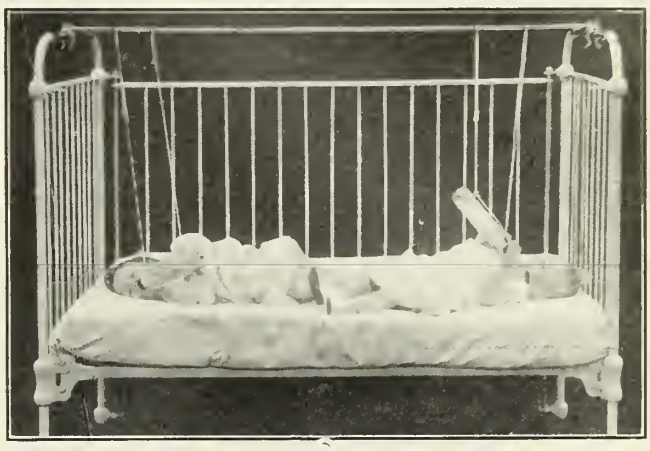


Fig. 1. Kolb baby-feeder. Child lying in crib.

who have made a study of the problem of feeding babies seem to agree that, where a convenience such as this is provided, the disposition of the baby would be to persist in feeding until the bottle is empty, instead of taking it up from time to time until the milk may have spoiled and has become unfit for consumption.

This device will undoubtedly be of special interest to hospital workers who are in charge of maternity wards, because it seems to be not only a great time saver and convenience, but a safe and scientific apparatus to increase

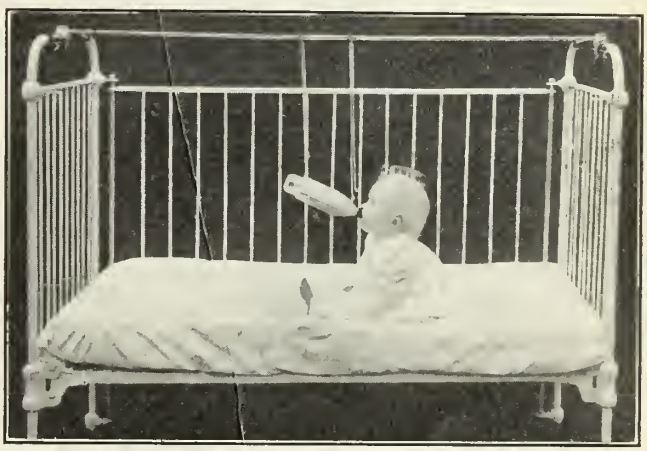


Fig. 2. Kolb baby-feeder. Child sitting in crib.

the efficiency of their departments. There need be no fear of contamination, as the slings and cage can easily be rendered sterile.

The apparatus has been put on the market by the Kolb Specialty Company, of Philadelphia, and can also be secured at surgical supply houses and high-class department stores.

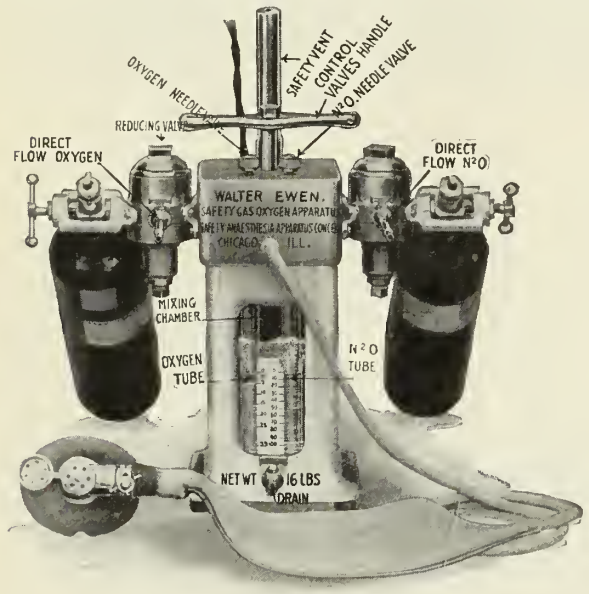
### The Will Walter Gas-Oxygen Apparatus

At the suggestion of Dr. Will Walter, of Chicago, the apparatus illustrated is now being manufactured, and, as its construction embodies some principles which are new, and as it is also of such design as to make it a practical

hospital anesthetic apparatus, we believe it well worthy the investigation of the hospital people. Compactness is one of its strong points, being small and light enough that it can be easily transported, yet having the modern attachments for prolonged and deep anesthesia.

The apparatus carries two nickel-plated, brass regulating valves, with silver diaphragms. These valves are permanently set and require no adjusting. From the regulating valves the respective gases are carried through their control valves, needle valves, and tubes to the mixing chamber. The needle valves operate independently, and control the volume and ratios in which the gases are delivered to the mixing chamber. Both control valves operate from one handle, enabling the anesthetist to turn off or on both gases with one operation and without changing the ratios, once they have been determined.

The method of measuring and delivering the gases to the mixing chamber is an important feature of the device. Each gas enters its respective delivery tube, both of which are in the mixing chamber, from the top. The wall




The Will Walter gas-oxygen apparatus.

of the mixing chamber and the lower half of the delivery tubes are of transparent glass. At the middle of the delivery tubes are carefully constructed delivery holes, through which the gases pass to the mixing chamber. These tubes also open into the chamber at the bottom. A numbered indicator is placed between these tubes, to be used in determining the ratios between the delivery of the two gases. The mixing chamber is also provided with an electric heating coil, which keeps the temperature of the contents at about 100° F. A safety vent provides for the escape of the gases from the mixing chamber in the event of an excessive accumulation. This vent is hydrostatically controlled.

Before an operation warm water is poured into the vent, filling the chamber up to the top of the ratio indicator. When the gases are turned on from their respective needle valves, the water levels in these delivery tubes fall and rise as a greater or lesser volume of gas is being delivered. As the walls of chamber and delivery tubes are of glass, these levels are clearly seen, and provide an accurate sight-feed measurement of the ratios in which the gases are being sent to the patient. The flow of the gas is even, continuous, and under perfect control at all times. Interchangeable masks for nose, mouth, or full face are provided.

The apparatus is finished in nickel, the outside cover is of polished aluminum, and the parts in the mixing chamber are heavily silver-plated.

To sum up, the apparatus is portable, compact, and durable. A safety vent prevents undue pressure being exerted on the patients' lungs, unless otherwise desired. The gases are washed, warmed, and moistened. A separate needle valve regulation enables one to obtain any volume or ratio of the gases desired, while a sight-feed measurement shows the mixture being delivered. A one-hand control permits both gases to be turned off or on with one operation without changing the ratios determined by the valves.

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### American High Frequency Generator

High frequency currents are now quite extensively used for post-operative treatment. The machine illustrated is one which is especially attractive for sanitarium and hospital use, since it is of extremely compact design and light in weight, so that it will prove easy for the nurse to handle. The entire apparatus is contained in one housing, that is, the Tesla coil, condenser, interrupter, etc. In general form the machine resembles a hand vibrator. At the

American high frequency generator.

back an adjusting screw is available for regulating the strength of the current. The vacuum electrodes can easily be attached by simply pushing them into the socket, as shown in the illustration. This high frequency coil will operate on either direct or alternating current of 110 volts. It can be attached to any convenient electric light fixture, and the insulation is such that there is no possibility of accidentally shocking the operator.

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Prominent Hebrew merchants of Brooklyn, N. Y., have applied for the incorporation of an association which plans to build another Jewish hospital in that city. Among those who signed the application were Israel Rokeach, Joseph Prensky, John Sklar, Abraham Price, Joseph Jacobs, David Weberlowsky, Samuel Stein, and Rabbi Harris Masliansky. It is said that the institution will be located in the neighborhood of Willoughby and Tompkins avenues and that it will cost $500,000, of which $150,000 has already been subscribed.

# QUERIES AND ANSWERS

### Some Construction Problems

To the Editor of THE MODERN HOSPITAL:

Do you think it would be practical to have swinging corridor doors to all of the private rooms in a modern hospital? Do you think we should have transoms over the corridor doors in a modern hospital? Do you think it would be of practical utility to have private bath rooms?

I have advised our architect, from my own experience, that transoms are not necessary, and that private bath rooms, as a rule, are not often demanded because the patients usually go home as soon as convalescence is well established. Your opinion, however, based on wider experience, would help us out. OKLAHOMA.

We will try to answer your questions in the order in which you ask them.

1. We don't think it would be practical to have swinging doors to private rooms opening onto the corridor; when they would swing out, they would be liable to strike against something and somebody would get hurt, and we cannot see any earthly reason for having the doors swing out. Private room doors opening onto the corridors should be wide enough to admit a 42-inch bed. They should open inward, and they should be fitted with a check at the top and stops at the bottom.

2. By all means have workable transoms over every corridor door in your hospital; otherwise you will always have difficulty with your ventilation. We could give you many reasons for the necessity for transoms on the corridors, but the ventilation reason is sufficient, and, whatever you do, don't make the mistake of omitting them.

3. Whether you should have private bath rooms will depend on several things; (1) they make it possible for you to charge quite a little more for the private room, provided you have a clientele that can afford to pay good prices; (2) well-to-do patients, convalescing, will remain longer in the hospital if they can have bath facilities. We would not have bath rooms connected with the lower-priced private rooms.

The bath room is a matter of taste, but the transoms and the one-way swinging doors for private rooms involve fundamental hospital principles, and we hope you will not make any mistake in those two things.

### Cost of 25-Bed Children's Wing

To the Editor of THE MODERN HOSPITAL:

Can you furnish plans and cost for a children's ward of 25 beds for the care of medical, tubercular, and the infectious diseases? The idea would be to have the service in a separate building in addition to the present institution. Many people in the city have asked me the probable cost and endowment required to carry on such a service, and am seeking information for that purpose.

A NEW YORK SUPERINTENDENT.

It would be impossible to furnish plans for a 25-bed children's hospital unless we knew something about the local conditions, the arrangement of your present hospital, and a lot of other details that are not available. But we can give you some figures as to the probable cost, it being understood that because you have a hospital at the present time you would not need a very large equipment, such, for instance, as power plant, kitchen equipment, sterilizer equipment, etc.

You can build a very satisfactory building for 25 beds, and include medical cases, tuberculosis, and the infectious diseases, in the form of a two-story independent building at a cost of about $1,000 per bed, or $25,000 for the building. If necessary, you could do it for a good deal less than that, but we don't think you would be pleased with the result because a building of this sort should by all means be absolutely fireproof, and the arrangement should be such that you can segregate patients suffering from certain diseases, in accordance with modern scientific necessities.

Such a hospital as this should not cost much to run because it will be part of the older institution, and a good deal of the time there will be infectious diseases in it, and hardly ever will it be crowded. About the only expenses you will have to take care of will be nursing, which will be sporadic in character, janitor service to keep the building clean, and a small amount of extra food that the patients will consume, with a very limited amount of dressings and medicines. The nursing problem ought not to give you very much concern because you will not have to keep any definite number of nurses on duty all the time, but can send them, when necessary, from the main hospital.

We think you could pretty safely figure on running that 25-bed hospital for about 50 cents per day per bed, or $12.50; $4,000 ought to take care of that building for you for the year.

If you will send us the blue prints and a photograph of your present building, we shall be very glad to make some rough sketches for you to study, and which will at least be a guide in the perfection of your plans.

### Battleship Linoleum for Corridors and Ramps

To the Editor of THE MODERN HOSPITAL:

It is our plan to put something like a 3-foot width of battleship linoleum on the ramps and the corridors of our hospital. We may be compelled to put in full width, 8 feet, in the corridors and 5 feet on the ramps. But it is very expensive just now. What would THE MODERN HOSPITAL advise? FRED S. CLINTON, M. D., Tulsa, Oklahoma.

You will find that the battleship linoleum comes only in 6-foot widths, and, if you have 8-foot halls, we wouldn't think of putting in the full width. The 6-foot width in an 8-foot hall would be just fine. We put a 6-foot width in a 7-foot hall in one big building, and, with a 4-inch piece extended onto the 2-inch cove base out onto the floor, another foot could be taken up nicely by the use of the same device—a figured border of some sort. The main thing is to see that the linoleum is sealed perfectly at all points underneath. If your floors in the corridors are concrete or terrazzo, or one of the compositions, and you want to put linoleum runners, we would fasten them with a brass arrangement, and we are asking Dr. A. R. Warner, of Lakeside Hospital, Cleveland, to send you a little sketch and description of how they put their linoleum runners in, using such a brass strip. Dr. Warner did very well, and his job was a good one.

Your problem is quite different from the one we had, yet we gladly furnish the information. We have much battleship linoleum and cork carpet in the center of our wards, and, in fact, in all runways in the hospital. This had been mopped, and the water soaked into the cracks until all joints had rotted away and left cracks of various widths. We went over it all carefully, cutting back to the sound linoleum, changing and substituting pieces to

make up for the shortage. Over the cracks we nailed ordinary brass edging 1¼ inches wide, and then shellacked it all over. The mopping has been reduced to a minimum —in fact, in some places entirely cut out. The floors are swept with a sweeping compound to keep down the dust, and on the linoleum is sprayed a very small amount of light oil. With this treatment a linoleum keeps the gloss varnished surface with approximately two coats of shellac a year. The daily treatment is not more expensive than mopping, and the longer wear from the linoleum will pay for the shellacking, and the appearance is more satisfactory. Along the edges of the linoleum where there is little wear we use the wood tips to protect it. Where there is excessive wear—in doorways, etc.—we use a patented brass bevel, which we obtain from the Vincent Barstow Company, of Chicago. It was patented by one of their employees. We do not know where else you can secure it. We are asking them to send a sample, with price. We have used this in doorways through which heavy trucks pass daily. It stands the wear and protects the linoleum satisfactorily.

### Sick Care of Graduate Nurses

To the Editor of THE MODERN HOSPITAL:

We are considering the proposition of taking care of our graduate nurses, giving them their hospital care—but a complication has arisen, due to the fact that some of them have come in under the care of physicians not under the supervision of the staff, so that the length of stay, etc., would not be under control of the hospital authorities.

We would like to know if it would be the proper thing to give hospital services, such as room, board, etc., to only those who place themselves under the care of the hospital authorities, as are the nurses in training, and to require those coming in under outside physicians to pay a reduced rate, such as we have been in the custom of charging all graduates. Our hospital allows any local physician to care for private cases. This, of course, is what gives rise to the complication. Could you give us any light on this subject as to the procedure in other hospitals in regard to this matter?

GEORGE D. HENDERSON,
Superintendent Holyoke (Mass.) City Hospital.

In our own hospital service we have always felt that, when a pupil nurse came into the hospital, the institution accepted certain obligations toward her—viz., that she was to get a good training and a diploma, in return for which she was to give certain services to the institution. When she got her diploma and went out of the institution, a graduated nurse in good standing in her profession, the institution had lived up to all of its obligations to her and owed her nothing more than reciprocal courtesies. After her graduation she gives nothing to the hospital for which she is not paid; she does nothing for the hospital unless paid for it, and we don't think the institution is under any obligations whatever to do anything for her for which it is not paid; she does, however, use what influence she has in behalf of the institution, and the institution, in its turn, should exercise its influence to see that she has professional work. So much for the obligation; some hospitals have an arrangement with their graduate nurses by which they have a right to go into the hospital when they are sick, at a reduced price for the room and service. In one hospital, the alumnæ association of nurses endowed a room in such a way that the members of the alumnæ always had the privilege of the use of that room at half price, and they have, and we think they should have, the privilege of choosing their own doctor, provided always that the doctor is persona grata in the institution. It hardly ever happens that a graduated nurse would come in as the patient of any other doctor than a member of the staff.

We certainly would not have any arrangement by which a graduate nurse could come into the hospital as the patient of any doctor, staff man, or other, unless she paid something for it. These women are not objects of charity, and, unless either they or their alumnæ have made arrangements about their care under certain specific conditions, we think the hospital ought to collect its fee from them—a reduced fee, but nevertheless a fee. That would, we think, avoid the possible difficulties about their staying too long, and the fact that they pay a fee also would, it seems to us, avoid the difficulties concerning the responsibility of the hospital in regard to their medical attention. Any other patient in your hospital has a right to choose his or her own doctor, providing he is paying a fee. Free patients have not a right to a choice. Why wouldn't the same thing be true in regard to the graduate nurse?

## UNIQUE SCHEME TO ATTRACT FUNDS

### Brooklyn Hospital Publishes Figures to Fit a Large or Small Purse, or Almost Any Favorite Philanthropy

The Brooklyn Hospital has chosen an effective but unique method to bring before the public the estimated cost of different special departments for the purpose of securing special donations. They have embodied their ideas in an attractive booklet, giving the statistical figures of the hospital and also the present activities, illustrated with neat floor plans and artistic sketches of prospective buildings.

In order that the general public may fully realize the special necessities of a hospital, and also be informed as to the ultimate expenditure of their gifts, the following list of approximate costs was devised:

SUGGESTED GIFTS FOR HOSPITAL

| | |
|---|---|
| $25,000 | will build the clinic lecture room. |
| 20,000 | will do all the work on the roads, walks and grounds. |
| 15,000 | will pay for the garage complete. |
| 15,000 | will equip the laundry. |
| 15,000 | will build one of the two large operating rooms. |
| 12,500 | will build the superintendent's house. |
| 10,000 | will build the office department. |
| 10,000 | will build one of two delivery rooms. |
| 10,000 | will build one of four 3-bed maternity wards. |
| 10,000 | will build the nursery. |
| 10,000 | will build one of two 4-bed maternity wards. |
| 10,000 | will build one small operating room. |
| 10,000 | will build one private ward. |
| 10,000 | will build one of two intern departments. |
| 5,000 | will equip the photographic room. |
| 5,000 | will equip the x-ray room. |
| 5,000 | will build one waiting room. |
| 5,000 | will build one sterilizing room. |
| 5,000 | will build one of two recovery rooms. |
| 5,000 | will build one of three private rooms. |
| 3,300 | will buy one automobile ambulance. |
| 2,500 | will equip one of two operating rooms or pathological laboratory. |
| 1,000 | will equip 12-bed ward and duty rooms. |
| 1,000 | will equip small operating room. |
| 500 | will maintain charity bed for one year. |
| 500 | will equip examination room. |
| 500 | will equip ward laboratory. |
| 500 | will equip emergency surgical ward. |
| 500 | will equip ward diet kitchen. |
| 500 | will equip one of two emergency treatment rooms. |
| 300 | will maintain child bed for one year. |
| 250 | will equip 6-bed ward. |
| 200 | will equip 4-bed ward. |
| 150 | will equip private room. |
| 100 | will furnish 2-bed ward. |
| 50 | will furnish bed and equipment. |

# THE HOSPITAL KITCHEN

Please address items of news and inquiries regarding The Hospital Kitchen (such as equipment and other matters connected with the kitchen and dependent departments of food storage and service) to The Modern Hospital, Kitchen Department, Metropolitan Building, St. Louis.

## The Hospital Kitchen

The hospital kitchen should today receive attention equal to that given the other departments, but, in planning the hospital, are the various requirements of the kitchen given all the thought required? Is it not often the case that the kitchen occupies a space that is not the best suited for its purpose, and is considered from the standpoint of convenience alone for service, with a sacrifice of many features that would improve the efficiency and the comfort of those working in that department? There must be good light, good air, and an equipment sufficient for the work to be done, this equipment to be selected with the best of judgment, as it is as much an error to overload with unnecessary apparatus as it is to omit the necessary items.

Our best kitchens seem to be the ones that receive light from above as well as from side windows, and are ventilated from above, and, while it is not always possible to have a kitchen building with light and air from overhead, it seems as if it could more often be planned for an upper floor, where these good features could be had.

The usual kitchen equipment includes a hood, which, of course, is necessary if there is no other means of ventilation, but, with the arrangement mentioned, this most uncomfortable piece of equipment can be dispensed with. Located directly above the range and other heated apparatus, and necessarily hanging low, not over 6 feet 4 inches above the floor, the hood deflects a large amount of heat, and, unless unusually well ventilated, there is always a large amount of steam and smoke from the cooking that is carried from under the hood by counter drafts perhaps to rooms near the kitchen, or out of the side windows to annoy someone in rooms above.

It is pretty generally accepted that the grouping of the apparatus in the center of the kitchen is the best arrangement, but the good features of such an arrangement are often partially offset by the lack of good light when the light comes only from side windows and the light is dimmed by a hood over the apparatus, for in the center kitchen the apparatus is away from the light from these side windows, and requires artificial light at an added expense.

A careful inspection of equipment will show that the greater part of the apparatus needed can be operated by steam, and, with jacketed kettles, vegetable steamers, cereal cookers, and meat roasters all using steam for operation, only a comparatively small range is needed. It is advisable to select as much steam-operated apparatus as possible so as to keep down the size of the range, for it is the most expensive item of operation, whether for coal, gas, or electricity, as well as the one giving off the most heat. Again, by using steam cooking apparatus, it is possible to remove all the vapors and much of the odor of cooking directly from its source by means of a proper system of vents. How many times one goes into a kitchen to find it full of steam from the kettles and steamers not properly vented and improperly operated!

Much thought could be given to the selection of tables, for, while a table must be convenient for operation, it also should be of such construction as to be absolutely sanitary. This also applies to sinks, for the sink that may look the best in the new kitchen is often found after a short time to be the most unsightly and unsanitary piece of apparatus in use.

Last of all, but not least, why not consider those who have to use the kitchen, and select such apparatus as is the most practical, and arrange the same in such a manner as to make it simple of operation and convenient for the work required?

A. H. BOYNTON,
Morandi-Proctor Company, Boston.

## Cost of Storage Refrigerators

As a supplement to the article which appeared in these columns in the April, 1915, issue, the accompanying illustrations show a typical storage ice box, with the different specifications which can be made for the same box, and the approximate prices at which the same sized box can be bought when constructed according to four different specifications. The cooling efficiency of each specification is also given. A storage refrigerator for, say, one 150-bed hospital would require to be approximately of the following dimensions: a compartment 20x10x11 feet for meats,

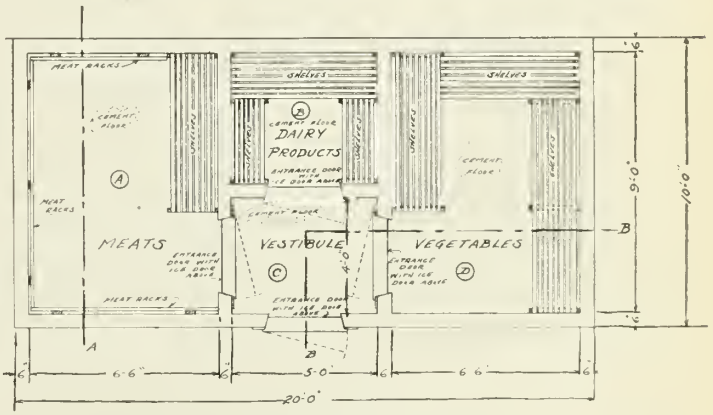


Fig. A. Floor plan.

a compartment 6½x9x11 feet for vegetables, and a compartment 4½x5x11 feet for milk, butter, etc., as shown in Figs. A, B, C.

The cost figures given and the efficiency figures are for this sized box, and are nearly enough correct to form a

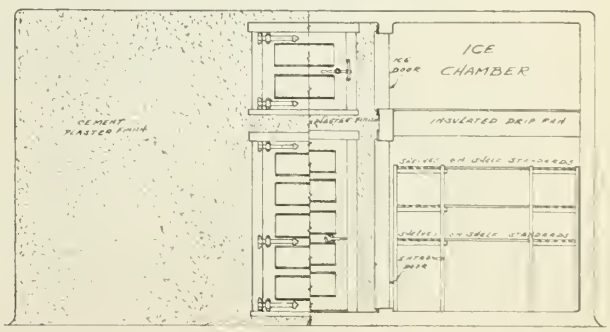


Fig. B. Part elevation.

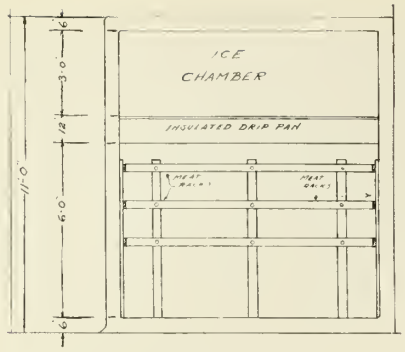


Fig. C. Interior detail.

reliable basis for comparing the four different specifications, drawings of which, showing the construction, are given in Figs. 1, 2, 3, 4.

SPECIFICATION NO. 1

The refrigerator walls to be insulated with 4-inch pure sheet cork, erected in two 2-inch layers in cement mortar; exterior and interior finish to be of Portland cement plaster; interior plaster to be finished with a coat of Ripolin white enamel or marbleoid; exterior plaster finished to

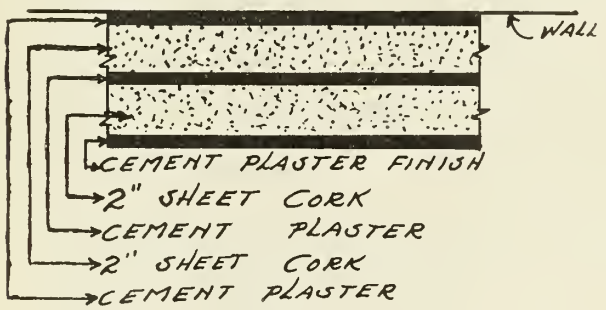


Fig. 1.

match furnishing of room; overhead drip pans to be insulated with sheet cork, fitted with insulated vents and lined with galvanized ingot iron; doors to be overlapping, with gasket packing, and fitted with brass ball-bearing spring hinges and self-closing brass lever fasteners; shelves and meat racks, including standards and uprights, to be tinned or galvanized.

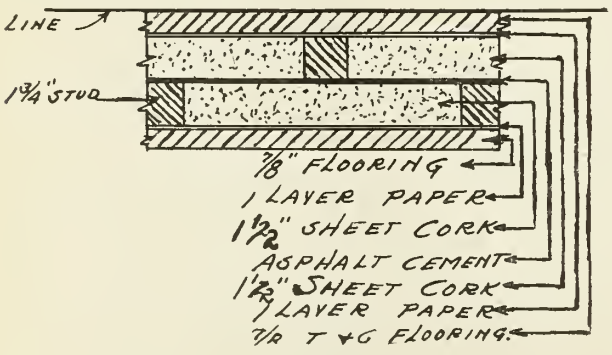


Fig. 2.

The foregoing specification calls for what is about the most perfect refrigerator that is built in modern refrigerator practice. Being built of cement, it is permanent in character and practically indestructible, except the doors, which, however, will last for a long period. Of course, more money can be spent on exterior or interior finish and hardware, but the cooling results will not be increased. A refrigerator built under this specification will retain its insulating efficiency just as long as it exists. The approximate cost of this refrigerator will be $1,685. The approximate heat loss will be 1.6 B. T. U. per square foot in twenty-four hours.

SPECIFICATION NO. 2

Refrigerator walls to be insulated with 3-inch pure sheet cork, with two layers insulating paper each side, and cork to be set in stud walls; interior finish spruce flooring, sandpapered and shellaced; exterior finish to be beaded flooring, painted two coats, overhead drip pans insulated with granulated cork, fitted with vents and lined with open-hearth ingot iron; doors to be overlapping, with felt packing, and fitted with spring steel ball-bearing galvanized hinges and secured with lever fasteners; shelves and meat racks and rails iron, tinned or galvanized finish; standards and rails iron, tinned or galvanized finish; uprights to be of wood.

The approximate cost of this refrigerator will be $1,350, the approximate heat loss will be 1.9 B. T. U. per square foot in twenty-four hours.

It will be noted that, while the cost of a refrigerator built under this specification is $335 less than that built under specification No. 1, the heat loss is only three-tenths of 1 B. T. U. per square foot more in twenty-four hours. The reason for this is that, while there is one-fourth less cork in its construction, the spruce lining, the wooden exterior, and the insulating paper act as insulating material, and to a large extent make up the reduced amount of cork. For economical cooling, therefore, specification No. 2 nearly equals No. 1, but the difference is in the durability. Any wood exposed to the damp will in time show deteriorations, and this is especially true of the interior lining. A difference, however, of about 20 percent in the cost is an item to be considered unless absolute permanency is desired.

SPECIFICATION NO. 3

Refrigeration walls to be insulated with 2½-inch hand-picked mineral wool, with two layers insulated paper each side, and mineral wool to be packed between studs and braces; interior finish spruce, flooring sandpapered and

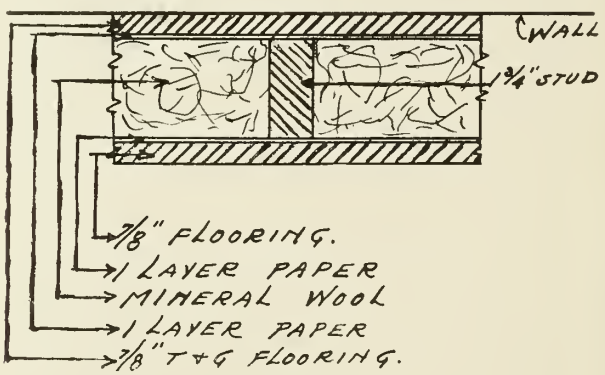


Fig. 3.

shellaced; exterior to be of beaded flooring, painted two coats; drip pan to be fitted with vents and lined with galvanized iron; doors to be overlapping, with felt packing, and to have steel ball-bearing galvanized hinges and to be secured with lever fasteners; shelves, meat racks, and rails, including uprights and standards, to be of wood.

The proximate cost of the same size refrigerator built under this specification will be $977. The approximate heat loss will be 4.9 B. T. U. per square foot in twenty-four hours.

This refrigerator costs $373 less than the one of specification No. 2 and $708 less than No. 1, but the heat loss is two and one-half times as much as No. 2; consequently, the increased cost of cooling will very soon offset the lower cost of installation, and, even supposing the refrigerator retained its efficiency, it would be the costlier in the end.

The presumption that this refrigerator, probably the most commonly used, will retain its efficiency is not justified. Mineral wool, being of a fibrous or porous structure, absorbs water; this water displaces the trapped air in the mineral wool, and the insulating power is lowered by the substitution of water (which is a heat conductor) for the air originally in the porous fibers. In time moisture is bound to reach the insulating material as the seams of the wood open or the refrigerator warps; rats often eat holes, which admit moisture through the mineral wool by capillary attraction, and, as the dampening of the insulating material proceeds, the insulating efficiency goes down, while the cooling bill goes steadily up. To the eye, however, this refrigerator looks exactly like the No. 2 when erected, except the difference in the shelving.

SPECIFICATION NO. 4

Refrigerator walls to be built 6 inches thick, with air spaces and layers of insulating paper nailed to the studding; interior finish to be yellow pine flooring, finished with one coat of stain; exterior finish to be of beaded

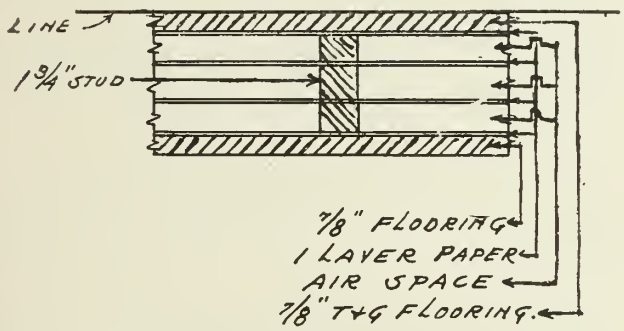


Fig. 4.

flooring, painted two coats; overhead drip pan to be lined with galvanized iron; doors flush, with common T-hinges and common fasteners; shelves and meat racks wood; no uprights or standards.

The approximate cost of this refrigerator will be $782. The approximate heat loss will be 8.3 B. T. U. per square foot in twenty-four hours.

This last specification is the cheapest form of construction, but the heat losses make it very costly in operation.

Theoretically, air permanently confined in dead air spaces is the highest form of insulation for efficiency, and various forms of careful construction produce refrigerators of undoubted efficiency when new, but, no matter how great the care exercised in building refrigerators with air space walls, the air spaces must soon become leaky owing to nail holes and the inevitable shrinkage of the lumber used in their construction. For that reason, where permanency is desired and the lowest cost of operation is sought, cork should be used, preferably set up in concrete, with enamel or marbleoid interior finish, or with wood wall and wood interior finish.

In buying storage refrigerators, it is all important that the firms invited to bid should bid on one specification, which should be decided on by the buyer on expert advice. If this is not done, accurate comparison of prices becomes very difficult.

# HOSPITAL, MEDICAL, AND SPECIAL MEETINGS

## Catholic Hospital Association Meeting

The second annual meeting of the Catholic Hospital Association is to be held in Milwaukee on June 7, 8, and 9, and the tentative program is published below.

There are to be some very important personages in attendance at the meeting, who will discuss the topics set down in the carefully prepared program. The participants are men high in their profession and others are people prominent in various activities connected with hospital administration.

In connection with the meeting of the association the Marquette University Medical School courses of study for sisters and nurses will begin, and will cover a period of about six weeks from June 12 to July 22. It is intended to give laboratory and didactic instruction for sisters in charge of hospitals and at the head of various departments, and for graduate nurses working in the institutions, some of the subjects being as follows: clinical pathology, bacteriology and medical photography, x-ray work, massage, anesthetics, social service, including hospital record keeping, sanitation, surgical free-hand drawing, and dietetics.

Father Moulinier, president of the association, was enthusiastic over the results of this course of study last year and intends to make it more comprehensive this season.

During the year quite a number of new members of the association have been registered, and it is expected that several hundred Catholic hospitals in all parts of the country will be represented at the Milwaukee convention. It is hoped that the excellent start made last year will be given a new impetus by the enthusiasm, eagerness, and ambition of the members to increase their knowledge in all branches of hospital administration.

The full program and the names of those who will participate in the discussions and all the details concerning the meeting will be published in these pages in the June number.

PRELIMINARY PROGRAM

FIRST DAY, WEDNESDAY, JUNE 7

9:00 a. m. Mass and sermon, Gesu church.
10:00 a. m. Registration; payment of dues.
11:00 a. m. Address of welcome by a city official.
11:30 a. m. President's address—Charles B. Moulinier, S. J.
12 to 2 p. m. Recess.
2:00 p. m. Paper, "The Nature, Value, and Necessity of 'Team Work' in a Hospital"—Dr. C. H. Mayo, Rochester, Minn.
3:00 p. m. Paper, "What the Physician Should Contribute to the 'Team Work'"—Dr. E. Evans, St. Francis Hospital, La Crosse, Wis.
4:00 p. m. Address, "The Ethical Basis of 'Team Work' in Hospitals"—Austin O'Malley, Philadelphia.

SECOND DAY, THURSDAY, JUNE 8

9:00 a. m. Paper, "What the Sister Should Contribute to the 'Team Work'"—Mother M. Esperance, St. Mary's Hospital, Minneapolis, Minn.
10:00 a. m. Paper, "What the Intern Should Contribute to the 'Team Work'"—Dr. E. H. Beckman, St. Mary's Hospital, Rochester, Minn.

11:00 a. m. Paper, "What the Nurse Should Contribute to the 'Team Work' "—Miss Adelaide Walsh, R. N., Chicago, Ill.

12 to 2 p. m. Recess.

2:00 p. m. Paper, "What the Patient Should Contribute to the 'Team Work' "—Dr. W. E. Fairchild, St. Mary's Hospital, Green Bay, Wis.

3:00 p. m. Paper, "What the Chaplain Should Contribute to the 'Team Work' "—Rev. F. W. Tracy, St. Mary's Hospital, Rochester, Minn.

THIRD DAY, FRIDAY, JUNE 9

9:00 a. m. Symposium—Paper 1, "The Medical Profession's Obligation to Every Patient Who Needs Hospital Care"—Dr. Henry A. Christian, Peter Bent Brigham Hospital, Boston. Paper 2, "The Hospital's Obligation to Every Patient Who Enters;" (a) Through Its Selection of Staff; (b) Through Its Selection of Interns; (c) Through Its Selection of Nurses; (d) Through Its Selection of Equipment; (e) Through Its Selection of Diet—Dr. Jon T. Bottomlie, Carney Hospital, Boston, Mass. Paper 3, "The Staff's Obligation to Every Patient Who Enters" —Dr. B. F. McGrath, Marquette University School of Medicine, Milwaukee, Wis.

12 to 2 p. m. Recess.

2:00 p. m. Business meeting.

3:00 p. m. Meeting of new executive board.

## Ohio Hospital Association Meeting

The next meeting of the Ohio Hospital Association, the organization of which was described in our issue of October, 1915, will be held at Cincinnati, Wednesday, Thursday, and Friday, May 24 to 26, inclusive. There is every assurance that the sessions will be largely attended, and the following program indicates that papers and discussions of much interest to hospital executives will be presented.

PROGRAM

WEDNESDAY, MAY 24

*Morning*

11:00. Registration.

*Afternoon*

1:30. Convention called to order by the president. Reading of the minutes of the previous convention. Address of welcome by Mayor George Puchta. Response by the president and president's address—E. R. Crew, M. D. Papers: 1, C. G. Souder, M. D., Toledo; 2, "The Hospital and the Operation of the Workmen's Compensation Act"—W. S. Hoy, M. D., Wellston; 3, "The Community's Obligation for the Care of Its Indigent Sick and Injured"—Mr. Fred. S. Bunn, superintendent Youngstown City Hospital. Discussion: The Rev. H. C. LeBlond, director of Catholic Charities, Cleveland. Reports of committees. Announcements.

*Evening*

8:00. Speakers: John A. Hornsby, M. D., Editor THE MODERN HOSPITAL. E. R. Hayhurst, M. D., director Division of Industrial Hygiene Ohio State Board of Health, "Compulsory State-Wide Health Insurance."

THURSDAY, MAY 25

*Morning*

9:00. Conference at Cincinnati Tuberculosis Sanatorium for Ohio tuberculosis hospital superintendents.

9:30. Round table discussions at Hotel Gibson. Subjects: 1, "What Constitutes 'Charity' in a Hospital." 2, "Affiliation of Hospitals in the Training of Nurses;" 3, "Hospital Organization;" 4, "What Hospital Employees Should Be Housed in the Hospital?" 5, "Should Pupil Nurses Be Used as a Means of Revenue to the Hospital?" 6, a discussion of measures of economy in hospital construction, management, and purchasing; 7, "What the State Medical Board Shall Do with the $38,000 Received in Nurses' Registration Fees;" 8, "Hospital Accounting of Patients Treated."

12:00. Buffet luncheon and visit to Cincinnati General Hospital.

*Afternoon*

2:00. Visit to Good Samaritan and Christ hospitals and auto ride around city.

*Evening*

6:30. Banquet at Hotel Gibson. Speakers: C. R. Holmes, M. D., chairman Cincinnati Hospital Commission; Charles F. Hoover, M. D., professor of clinical medicine Western Reserve Medical School and visiting physician Lakeside Hospital, Cleveland—The Recent Progress in Cooperation Between Medical Staffs and Hospitals to Secure Greater Scientific Results.

FRIDAY, MAY 26

*Morning*

9:30. Reports of committees. Election of officers. Symposium: The State Registration of Nurses Law. "The Operation of the State Registration of Nurses Law"—J. S. Cherrington, M. D., superintendent of Cherrington Hospital, Logan; Miss Laura R. Logan, R. N., superintendent of nurses Cincinnati General Hospital. Discussion: Miss Anza Johnson, examiner of nurses for the State Medical Board; Miss Mary M. Roberts, president State Graduate Nurses' Association; Miss Grace E. Allison, superintendent of nurses Lakeside Hospital, Cleveland; O. O. Fordyce, M. D., superintendent Athens State Hospital. Adjournment.

Papers on this program are limited to fifteen minutes. Discussions are limited to five minutes unless otherwise indicated. No papers will be read by title.

COMMITTEES

LOCAL COMMITTEE ON ARRANGEMENTS—A. C. Bachmeyer, M. D., chairman, superintendent Cincinnati General Hospital; Rev. A. G. Lohmann, superintendent German Deaconess Hospital, Cincinnati; Miss Alice Thatcher, superintendent Christ Hospital, Cincinnati.

NOMINATING COMMITTEE—A. R. Warner, M. D., chairman, superintendent Lakeside Hospital, Cleveland; Miss Alice Thatcher, superintendent Christ Hospital, Cincinnati; J. S. Cherrington, M. D., superintendent Cherrington Hospital, Logan.

CONSTITUTION AND RULES COMMITTEE—C. B. Hildreth, chairman, superintendent St. Luke's Hospital, Cleveland; Miss Margaret B. Mateer, superintendent Lima Hospital, Lima; Miss Margaret M. Wallace, superintendent Toledo Hospital, Toledo.

MEMBERSHIP COMMITTEE—Rev. A. G. Lohmann, chairman, superintendent German Deaconess Hospital, Cincinnati; Miss Rose K. Steinmetz, superintendent Children's Hospital, Akron; Sister A. M. Purcell, superior St. Vincent's Hospital, Toledo.

RESOLUTIONS COMMITTEE—Rev. H. C. LeBlond, chairman, director of Catholic Charities, Cleveland; W. S. Hoy, M. D., superintendent Hoy Hospital, Wellston; A. C. Bachmeyer, M. D., superintendent Cincinnati General Hospital, Cincinnati.

LEGISLATIVE COMMITTEE—F. S. Bunn, chairman, superintendent Youngstown City Hospital, Youngstown; Miss Mary A. Jamieson, superintendent Grant Hospital, Columbus; J. S. Cherrington, M. D., superintendent Cherrington Hospital, Logan; Miss M. A. Lawson, superintendent Akron City Hospital, Akron; W. S. Hoy, M. D., superintendent Hoy Hospital, Wellston

AUDITING COMMITTEE—H. J. Pool, M. D., chairman, surgeon-in-charge Pool Hospital, Port Clinton; Miss Alma C. Hogle, superintendent Huron Road Hospital, Cleveland; Miss Nellie I. Templeton, superintendent City Hospital, Salem.

## Kansas Hospital Association Meeting

The next meeting of the Kansas Hospital Association will be held at Topeka on Tuesday, May 2, in the offices of the State Board of Control in the Capitol building.

PROGRAM

President's address—Dr. J. T. Axtell, Newton.

"The Training Schools for Nurses in Kansas"—Sister Catherine Voth, member State Board of Registration and Examination for Nurses.

"The Responsibility in Cases of Hot Water Bottle Burns"—Dr. R. Claude Young, Arkansas City.

"The Small Hospital and the Training School"—Dr. F. W. Shelton, Independence.

"The Necessity of Vital Reports"—W. J. V. Deacon, State Board of Health, Division of Vital Statistics.

"A Bureau of Standards and Supplies"—Dr. M. Trueheart, Miss Myrtie Proctor, R. N., Sterling, Kas.

The Hospital of the Good Shepherd, Syracuse, N. Y., is the possessor of a fine, new motor ambulance presented to the institution by Alexander T. Brown, a trustee of Syracuse University and a member of the hospital board. The vehicle is arranged to accommodate three patients in emergency cases. When a single patient is carried, there is provision for an easy couch in an adjustable position, with ample room and an abundance of light and air.

Dr. Wilmer Krusen, director of the department of health and charities of Philadelphia, recently announced that the first step in the proposed extensive improvements at the Philadelphia General Hospital will be to bring the pathological and clinical laboratories up to a high standard. A fund of $4,000,000 is now available for new buildings and equipment at this institution.

A fine new home for St. Mary's Hospital, Walla Walla, Wash., will be completed about July 1. The building is a five-story fireproof structure of tile and brick, with stone trimmings. It will have a capacity of 125 beds, and when fully equipped will have cost over $250,000. The old frame building in which the institution was formerly housed was destroyed by fire in January, 1915.

# THE MODERN HOSPITAL

*A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services*

Vol. VI *June, 1916* No. 6


## THE CONVALESCENT FIELD—ITS NEW AND CHANGING BORDER LINES[1]

### Country Convalescence Must Broaden Out to Meet the Problems of Cardiacs, Rheumatism, Tuberculosis, Borderline Mental Men, Adolescents, Colored People—Experience Is Guiding Along Sane Channels


By FREDERIC BRUSH, M. D., Superintendent The Burke Foundation, New York


THE hospital efficiencies most needing development are not now internal, but are in the lines of the hospital extensions—in work for health outside of the main buildings. Better dispensary service (with some branch stations), health center work from hospitals, adequate social service, long-term "follow," prevention, convalescent supervision—these indicate the main attracting possibilities of the newer hospital efficiencies. The American hospital is yet greatly underrated as a health instrument. It survives many stresses, grows steadily, and gets funds beyond almost any other organization. The present need is not for so many new, small, and precarious associations, but longer, stronger extension arms to the hospitals.

Hospital efficiency thus covers convalescence, which is taken here to include health increase, health holding, and prevention of health deterioration. Raising the sick, handicapped or subnormal, to their fullest working efficiency, and keeping them there, differs widely, as a plan, from the old admitting, treating, and discharging of patients.

What are the *fields of convalescence* as at present demonstrated or foreseen? The question is coming rapidly into importance. Millions of dollars in this vicinity alone are awaiting, or already planning, expenditure in convalescent lines. We need not here review the long history (mainly in England) of the convalescent home, for it is evident that this country will develop its own types. Roughly—and with much gradation, of course—we may outline our convalescent care as follows:

1. The older type of convalescent home; usually small, taking part pay for services when possible, equipped to give rest and good food, and necessarily admitting but few yearly and from a very restricted class. The work of these homes will probably not increase much. Some are being discontinued with the passing of a supporting personality, or group; others are falling behind in efficiency (poor locations, etc.). Their product will be fairly good, but small, comparatively.

2. The larger convalescent institution; accommodating from 40 to 300 or more, and affording, in differing degrees, nursing and some classification of patients, medical attendance, surgical dressings, recreations, physical therapy, occupational training, etc. These homes may be governmental, or private corporate, or branches of hospitals or organizations. This promises to become quite distinctively an American type of health plant; the formative stage only is entered.

3. The country branch hospital; for years proposed and discussed; significant that it has scarcely been attempted. The hesitancy of managers to try it has been wholesome, probably. Ideas have changed, and there begin to appear more definite and feasible plans for what will be more the suburban branch of the large city hospital, located upon ample grounds (for sure growth, even to becoming the main institution later), within four to twelve miles of the parent (reachable by staffs and visitors), and giving cheaper and better accommodation to a considerable percentage of early transferred patients—as well as standard hospital, dispensary, and social services to the contiguous community. Some con-

[1]This is a paper recently read before the Harvard Medical Society of New York in a symposium on "Hospital Efficiency."

valescents would also be accommodated. Costs should be one-fourth, or more, lower than in the main institution. Centralized managements of extensive health plants is not the least of the advantages instead of many small struggling new institutions. Grace Hospital, in Detroit, is valuably leading in this direction.

4. The pay convalescent home; there is a very moderate but persistent demand for this. A serious gap exists with us between the free home and the often unsatisfactory and expensive private sanatorium. Such place needs to be small, and, above all, partly endowed, exceptionally equipped and managed—its rates from $7 to $20 per week. Pay convalescence as attempted thus far in small houses, usually by nurses, has mainly failed, financially and otherwise.

5. Home convalescence; to be more definitely organized, as a branch of health work, probably in the social service departments, with overlapping avoided.

Outline Plan:

1. Patients to be chosen, generally, before ready to leave hospital, and certain ones selected for this kind of convalescent care (as certain others would be for the convalescent homes).

2. Patient's home to be arranged in advance, and to be further organized on arrival of patient as to room, bed, air and sun, noises, bathing, rest periods, surgical dressings, visitors, housework, feeding of patient and family, family physician's cooperation, children, and patient's therapeutic and then productive occupation as strength returns. The Boston Dispensary is pioneering in this.

3. Experiment tried best with hospital having well-developed social service, to cooperate rightly in selections, and with one to three special home convalescent workers, in a convenient and limited district.

4. Cost accounting from the start; hence cover enough field to give a typical experiment.

5. Card records and long-term "follow."

*Advantages of home convalescence properly directed:*

a. Low comparative costs, probably one-third that of institutional convalescence.

b. Continuity of service to the patient. (The added break of going to country convalescence deters large numbers. "Going home" is restorative in many cases.)

c. Home held together.

d. Home educated—bettered.

e. It would cover the great majority who will not, for various reasons, go to convalescent institutions (probably 60 to 80 percent of those needing convalescent care).

6. Convalescence within the hospital; some things can be added here in most hospitals. More use, with classification, of balconies and grounds, table feeding, occupation, libraries—these indicate the ways, especially for the many institutions blessed with acreage; e. g., an inexpensive convalescent camp on the corner of the ample grounds of a large hospital is being considered.

So much for the convalescent plants and their organizations. But *who are the convalescents*—rightly to be sent to these various and increasing homes? Five years ago the list might have read: "Persons recovering from operations or illness, with little or no surgical dressings, and able fairly to care for selves; and certain other deserving persons temporarily distressed and out of place in life."

But the more recent extensions and plans in the convalescent field cover:

1. Surgical dressing cases — and these quite broadly. Wounds heal more rapidly in the convalescent home for various obvious reasons. Sun treatment may be given; most of the irrigations and applications done; physical therapy instituted and continued; the surgeon's cooperation held by phone, letter, or visit; exercises and occupations started which toughen and train and cheer the patient for sooner and surer reentrance on productive life. Motor transportation is successful in many classes of fairly recent operation. At the Burke Foundation we are doing 800 surgical dressings per month, and we welcome nephrectomy, empyema, mastoid, many recent fractures, wounds with drains, etc., etc. Results are most satisfactory.

2. Heart disease. This large problem can be touched here in outline only, but convalescent homes must learn how to let down the bars, measurably, on this most prevalent illness. They cannot well do this (so negative and even disastrous have been results in the past) until the machinery for the proper selection of patients is set up and running; nor until they are themselves equipped with requisite medical and nursing attendance, occupation therapy, etc. Special institutions and means may well be devised for these sadly handicapped (as the trade school for cardiacs of New York), but heart disease has so many grades and is so prevalent in all the zones of life that surely considerable numbers should be convalesced regularly in the larger standard homes.

Three examples of feasibility:

a. Those with fair compensations and reserves should not (as now) be refused because labeled "heart disease," "a murmur," etc., when needing (as so often) *convalescence for other reasons.*

b. Those who just "tire on the job" frequently, with fairly holding compensations, should be given periodic upbuildings, and in this way kept in productive life.

c. Youths should be given first place in cardiac convalescence, and many more beds opened to them. *Youth is to be the main point of attack on heart disease.* Recent experiments of the Burke Foundation and others show, apparently, that country convalescence of cardiac youths

is surprisingly successful, and without very special equipment or precautions.

These three phases have here been entered on. Cardiacs recovering from recent severe attacks should *not* be sent early to standard convalescent homes. They relapse too frequently. Prolonged hospital or house care and "follow," with ambulatory attachment to "cardiac classes," and occupational supervision, is their inadequate best chance now presenting.

Fig. 1. Bird's-eye view of the Burke Convalescent Home, White Plains, New York, which is leading the way toward broader conceptions of convalescent possibilities.

3. Men. We have had almost no convalescent places for them. The need is probably one-half that of women, and is on the average *a surer need.* For example, no convalescence equals in certainty and gratification that of, say, the post-typhoid sailor or laborer, without friends or room or fit clothes, weak and neuralgic, but courageous and sure of happy productivity if he "gets on his pins"—and pretty sure of bad city deteriorations without this convalescent aid.

4. Rheumatism. The situation is somewhat like that of heart disease. Relapses are discouragingly frequent, apparently from just being sent out to convalesce—the mere change. Who cares to feel the responsibility for a single recurrence of rheumatic fever, with its probable end results? Longer in bed, longer about the hospital and the home, and then country convalescence only if specially needed for general upbuilding, or complications, seems the best course at present. Special institutions have been proposed for rheumatism and the arthritics, but the indications are not yet clear. Much of this class will naturally be cared for along with heart disease, and heart disease is going to be covered in more comprehensive ways in the near future.

5. Tuberculosis. Bone, kidney, and like forms should be quite freely received, and given longer stay than average. And, despite the probable necessity of stating that pulmonary tuberculosis may not be admitted, it will be frequently present in the convalescent institution if the place is giving a high kind of service. Signal benefits may be rendered there in treating and observing, and insisting on full diagnosis, in that large group labeled, "threatened with T. B.," etc. (and who nearly always have it). This is "adult preventorium" work of much importance. Then, there is the small but definite class just returning arrested from the sanatoriums for tuberculosis, and needing (most often for social reasons) a few weeks of continuation care while right environment is being arranged. Even the quiescent, admittedly lung affected may occasionally be accepted, with precautions; for these so often in other ways, and

Fig. 2. A stretch of landscape or vista, where every sound that breaks the silence spells health.

for brief period only, need precisely what the country home can give.

6. Mental convalescence. There are possibilities, rather vague as yet, of bringing into the convalescent field the early, or oft-called "borderline," or "observation" mental conditions, and some of the nervous diseases and habits. The gap in our provision for the treatment of the poor and middle people in these troubles is painfully apparent. It is, however, a most difficult problem.

A crude, but at least debatable, starting program may be outlined as follows:

a. Convalescence in the standard home? No; not only fails, but reduces the good of the place to others. Experience is fairly adequate for this judgment.

b. A very large general convalescent plant with much land might try a separate cottage, with special service, and give partial use of the general occupation, amusements, library, etc. This would be fairly economical, but complicating and doubtful of success.

c. The existing institutions for mental diseases, both state and private, should be outfitted to greatly extend convalescent effort. They have broad lands, separation and camp possibilities, central service and occupation plants, and some "follow" becoming available. The "asylum" stigma is lessening, and will be fairly outworn in time, especially by just this work.

d. The special mental convalescent institution is in many minds. It would take certain patients from asylums and others directly, and should be complete in occupation especially, have moderate pay and free beds, and be really a first-class sanatorium, but endowed for one-half support at least. It might best be near the city, in order to link up closely with normal life through an occupation-employment-sales center, serving several organizations perhaps. The establishment of this latter should precede the convalescent institution. *Success in mental convalescence is going to hinge on occupation;* and occupation therapy is measurably failing everywhere because of *lack of sales outlets for its products.* Costs would be $2 to $3 per day per capita; length of stay three to twelve months; cost per patient, $300 to $1,000; failures many—probably a majority. This gives us pause, and should make us constantly compare the institutional plan with mental welfare work in the homes and in occupational centers, and the use of existing occupations.

7. Adolescence. This vital age of 12 to 16 "falls between" as to institutional care, and for well-known reasons. It should not continue so, especially in convalescence and allied welfare provisions. Thirty beds for boys and a like number for girls have been opened here this year, and results are gratifying. Separation care is desirable for this age.

8. The colored people. Over 100,000 in this community and increasing by thousands each year, with practically not a convalescent bed for them—expensive health policy, of course. We all lose or gain together. A separate small home is the answer. The Burke Foundation is now conducting such a branch, and it is proving to fill a definite need. They respond with peculiar happiness and success to country convalescence.

9. Preventive convalescence (using the latter term broadly). Is only in beginnings. Some fear the building of too many convalescent institutions. With this preventive health upbuilding well under way, there would be needed five beds where now is one. We have tested and estimated that, at lowest, 10,000 adults per year should and would go out for short periods of health building from New York dispensaries alone; a little over 500 may go this year. The dispensaries and the various social services must be the main dependences in finding and sending these patients. The medical-social machinery to accomplish this does not yet exist, or is inactive. This is really the big end of the convalescent job; and scarcely anybody is on it. But good beginnings are being made. Employers, department stores, friends, physicians, various societies, schools, health boards, etc., are cooperating a little. The dispensaries are as yet disappointing in this, and apparently must await special salaried social workers in them.

There are lesser side-lines of convalescence, as the fresh-air day camp, mothers with babies, orthopedics, etc., which we may not here discuss. We have looked over the main convalescent field, with the more recently entered or proposed extensions — surgical dressings, cardiacs, rheumatism, tuberculosis, borderline mental, men, adolescents, colored, preventive. These represent wide expansions. There is danger of overdoing convalescent provision in some directions. The borderlines will best be determined, somewhat slowly, by experience.

The best location for a hospital is outside of but very close to the city, or in an isolated quarter, little crowded with houses and inhabitants, and where the air is easily renewed.—Becquerel.

Among the nations of antiquity the Greeks and Romans have done the chief work in the field of public hygiene. Mank Greek statesmen and philosophers occupied themselves earnestly with hygienic questions, and proclaimed the principle that it was the duty of the state to provide for the health of the people.

In the early centuries all hospitals were of the same general kind, but later they were separated into general and special hospitals. Among the latter were the manicomia, the syphilicomia, or hospitals for venereal diseases, special hospitals for skin diseases, for diseases of children, etc.—B. Bufalini.

The principle of hospital establishments sprang from the realization of Christian philosophy—of that philosophy which, in breaking the chains of slavery, proclaimed all men equal before God, and commanded them to love each other and to assist each other as brethren.—Felix Roubaud.

# AN AMERICAN HOSPITAL ONE HUNDRED AND EIGHTY YEARS OLD[1]

## Bellevue, of New York, Begun as a Prison and Poor House, the Victim of Graft and Greed for Many Years, Nears Its Second Centennial a Magnificent Pile of Modern Buildings—Its Development and Achievements

By OUR SPECIAL CORRESPONDENT, New York

AFTER one hundred and eighty years of service to the sick and injured of New York, Bellevue Hospital is at last to be housed in buildings in keeping with the needs and deeds of this historic old institution. Established by the colonists of New York as a department of the public workhouse, the hospital is now the oldest for the care of acute cases in the United States. When the new buildings providing for 2,250 patients are completed, Bellevue will be the largest as well.

From its origin until 1848 the hospital was simply a department in New York's charitable and corrective system. Not until sixty-eight years ago it was divorced from the penitentiary and almshouse and established as an independent institution. Even then the hospital had to be content with a building that had been designed originally as a poorhouse. This building stands today and is still occupied by part of the hospital. But now, on the one-hundredth anniversary of the completion of this old structure, a group of magnificent new buildings is being erected which, when completed, will rank Bellevue with the foremost medical institutions in the world.

Bellevue Hospital traces its origin in an unbroken line to the infirmary of New York's first public workhouse. This was erected in 1736 and was designed primarily for the confinement of unruly characters; to this end it included a workshop for those sentenced to hard labor, a cage for the refractory, a store room, and living quarters for the warden. The infirmary was incidental. It occupied a small room on the second floor, contained six beds and overlooked the Hudson river, and for many years Dr. John Van Buren was the vititing physician. He was succeeded by his son, Beekman.

This first almshouse-prison-hospital was at the northern outskirts of the town, on the Boston Post Road, near where the City Hall now stands. The two-story structure served for sixty years, and then the conglomerate institution was transferred to larger quarters just north of the present Chambers street. That building, too, was soon outgrown, but it was not until 1816 that a different site was available.

Property for a pesthouse had been acquired by the city in 1794 at Belle Vue on the East river. With the acquisition, in 1811, of adjoining property on Kips Bay, a new group of buildings was erected. These consisted of a three-story structure of gneiss rock for the paupers (which later became the hospital), a smaller structure to serve as a penitentiary, another building to be occupied as a workhouse, and two one-story buildings, each 25x75 feet and containing six rooms, for hospital purposes. The institution was known as the Bellevue Establishment, the name of the locality having been given the institution. The corner-stone of the main building was laid in 1811, but, because of delays during the war of 1812, the structure was not ready for opening formalities until April 29, 1816.

The building for paupers was the largest of the group, and, with the exception of certain additions, stands today substantially as it was on the day the establishment was formally opened. It is 325 feet in length and 55 feet wide, with wings each 100 feet long extending north and south from the central building. The structure originally was three stories high, but after it was converted to hospital purposes a fourth floor and an operating amphitheater were added. Still later an extension to the north wing made the structure L-shaped.

As in the original public workhouse and later at Chambers street, facilities at Bellevue Establishment were such that prisoners, paupers, and invalids lived together. Whatever nursing the patients received was given by prison "trusties" and other unreliables. This intermingling of the unruly, the unfortunate, and the sick had long been recognized as an evil, but it was many years before prison, almshouse, and hospital were finally separated. The first move in this direction came in 1836, when male prisoners were transferred to the new penitentiary on Blackwell's Island. Two years later female prisoners were transferred to the Tombs.

In the meantime the hospital department of the establishment had been moved to a part of the workhouse, resulting in a material increase in capacity. But still further enlargements were necessary, and in 1826 the hospital was transferred to a building which had been erected the year before at the southeast corner of the grounds—what is now the foot of East Twenty-third street—and

[1]Acknowledgment is made to the alumni of Bellevue Hospital, from whose book, "An Account of Bellevue Hospital," published in 1893, much of the historical data and several of the photographs used with this article were obtained.

designed as a pesthouse. Fever patients were moved to the top of the house, and the general ward patients occupied the lower floors. Not until 1837 was a separate pesthouse maintained.

In 1848, the present City Farm Colony having been laid out on Blackwell's Island, the paupers were taken from the Bellevue Establishment, and the hospital was moved into the vacated building. The structure was in a dilapidated condition—the shingle roof leaked, plaster fell from ceilings, doors sagged on their hinges, and regulated ventilation of the wards was impossible. Yet, bad as it was, it was welcome—the hospital was at last free of its pauper-convict alliances.

Fig. 1. The first poorhouse in New York, 1736. The beginning of Bellevue Hospital.

Coincident with the transfer of patients from the old pesthouse, the "city stepfathers" (as certain aldermen of that time were called) decided that the Bellevue grounds were too large; so they "obligingly" purchased all the property lying within the bounds of the East river, Second avenue, Twenty-third street, and Twenty-sixth street, and between First and Second avenues north to Twenty-eighth street, reducing the grounds to two city blocks. When, in planning for the present Bellevue enlargement, it was seen that more ground would be needed, the block to the north, bounded by Twenty-eighth street, First avenue, Twenty-ninth street, and the river was purchased. In 1845 the city "stepfathers" sold eight city blocks to themselves at a price in keeping with the nature of the transaction. In 1904, when the needs of the hospital required more ground, the city had to pay $1,677,983.29 for one block.

Fig. 2. Bellevue Hospital in 1848.

From the time the paupers were moved to Blackwell's Island, Bellevue has been devoted entirely to the care of the sick and injured. From time to time various additions and improvements have been made to the old gray building. The north wing extension was added in 1855, and during the following year the fourth floor and the surgical amphitheater were built. This was the first operating amphitheater ever planned for a hospital. It provided observation accommodations for 600 medical school students, who were to have the privilege of studying cases in the wards and watching surgical work in the operating room. Later, as demands increased, new buildings were erected on the grounds. One of these was a pavilion for alcoholic patients and another was an observation ward for the treatment of supposedly insane. In 1869 an emergency ambulance service, the first in the world, was introduced by Dr. Edward B. Dalton, who during the Civil War had charge of the ambulance corps of the Army of the Potomac.

In 1902 it was decided by the city authorities to take certain institutions from the jurisdiction of the Department of Charities and control them through a board of trustees. As a result Bellevue, Fordham, Harlem, and Gouverneur Hospitals are now managed by trustees appointed by the mayor on the recommendation of the private charitable organizations of the city. These hospitals are now known officially as Bellevue and Allied Hospitals.

One of the first acts of the board was a recommendation to the city that new accommodations be provided for each hospital.

The plans for the new Bellevue call for twelve pavilions designated by letters from A to M, with J excepted, a pathological laboratory, dormitories for men and women workers, an out-patient department, an isolation building, two amphitheaters for medical and surgical clinics, a boiler house, a laundry, and a garage for the ambulances. Of these, pavilions A, B, I, K, L, and M, the pathological laboratory and morgue, the male dormitory, the laundry, and the boiler house are completed and occupied. They represent about half of the entire plan of reconstruction.

Fig. 3. Bellevue Hospital in 1879.

In the center of the operations stands the old poorhouse-hospital, substantially as it was one hundred years ago, when it was formally turned over to the city. The operating room on the top floor served until last fall, surgical patients are still treated in the wards, and the quarters of the house staff are in the building, as also the administrative offices.

Of the new Bellevue pavilions, A and B, which house the medical, maternity, and children's wards, have been completed and occupied since 1908. The pathological laboratories at the corner of First avenue and Twenty-ninth street have been occupied since 1911.

The laboratory contains the various departments for pathological research, a library for physicians, and a display of specimens, of which the Woods collection forms an important part. The morgue, which occupies the basement and two lower floors of the building, provides every

Fig. 4. Bellevue Hospital in 1893.

Fig. 5. Bellevue Hospital in 1916. (Photograph by courtesy of the New York Edison Company, to whom acknowledgment is made.)

facility for the care of the dead. Although occupying part of one of Bellevue's buildings, the morgue is not under the jurisdiction of the Bellevue trustees. Instead, it is controlled by the Department of Public Charities, which rents the space. It receives not only the bodies from Bellevue, but from other institutions as well. The unknown dead of the city are held here for identification, and from here unclaimed bodies are sent to the city cemetery or to the medical schools for anatomical purposes. In addition to the vaults for the preservation of bodies, there is a glass-covered section for the display of unknown dead. There are twenty-four slabs in the display section and room for 249 bodies in the morgue. Artificial refrigeration, provided by coils of circulating brine, has taken the place of the cakes of ice of New York's old morgue. There are embalming rooms for undertakers, autopsy rooms for coroner's physicians, a general autopsy room of six tables, with facilities for class demonstrations, and a mortuary chapel for funeral services.

Occupying the south wing of the pathological building is the dormitory for male help. This department is in charge of a Y. M. C. A. secretary, and under his direction various facilities for recreation are provided. Among these are a game room, a smoking room, and a library.

Surgical pavilions L, M, K, and I were completed during the past year. The general surgical wards are in L and M, which occupy the northeast corner of the grounds, overlooking the river and directly opposite the medical pavilion. The operating rooms, eight in number, are on the fifth and sixth floors of pavilion K, which adjoins L and extends westward along Twenty-ninth street. The lower floors of this pavilion have small operating rooms and small wards for the treatment of all special cases. The x-ray department and the department of hydrotherapy are also in this building. Pavilion I, which is an extension of K, connecting with the pathological building, contains surgical wards on the upper floors, an infirmary for the care of members of the medical and nursing staff, and the house staff dining room. In the wings from pavilions K and I are the rooms of the house staff. Seventy-two in number, these rooms are arranged in suites of two, three, and four. On the ground floor of the wing from I is the new surgical amphitheater, having a seating capacity of 200. Pavilions C, D, E, F, G, and H, still to be erected, will contain psychopathic, alcoholic, prison, and children's wards, wards for specialties, an amphitheater for medical clinics, and additional living quarters for the house staff. The administration offices will also be in one of the new pavilions. The next to be erected will be F and G. According to present plans, work will be started this year, and the buildings should be completed in about two years. In addition to these pavilions, a building is planned for the Twenty-sixth street side which will contain the isolation wards and the ambulance house. There is also to be erected the corner unit at Twenty-sixth street and First avenue, corresponding in location with the pathological building. This will house the outpatient department and will provide living quarters for women helpers.

Two buildings of great importance, yet not devoted directly to the care of the sick, are the laundry and boiler house. These are on the Twenty-ninth street side of the grounds and were completed in 1911. The laundry has a capacity of 10,000 pieces of wash a day, and here all the bed linen, the clothing of patients, and the uniforms of nurses and doctors are washed. The laundry is operated throughout by electricity, the installation being composed of seventy-one motors aggregating 240 horsepower. The boiler house adjoins the laundry and provides heat for all purposes, hot water for the laundry and hospital, power for the refrigerating system, and throughout the year steam for the sterilizers in the various operating suites.

Bellevue, both the old and the new, is lighted throughout with electricity, and the various wards present some interesting contrasts in illluminating methods. In the new buildings the indirect system is used exclusively. Opaque reflectors throw the light against the ceiling, resulting in a diffusion that is brilliant enough to permit doctors and nurses to perform their duties, yet so subdued that there is no eye strain on the patients.

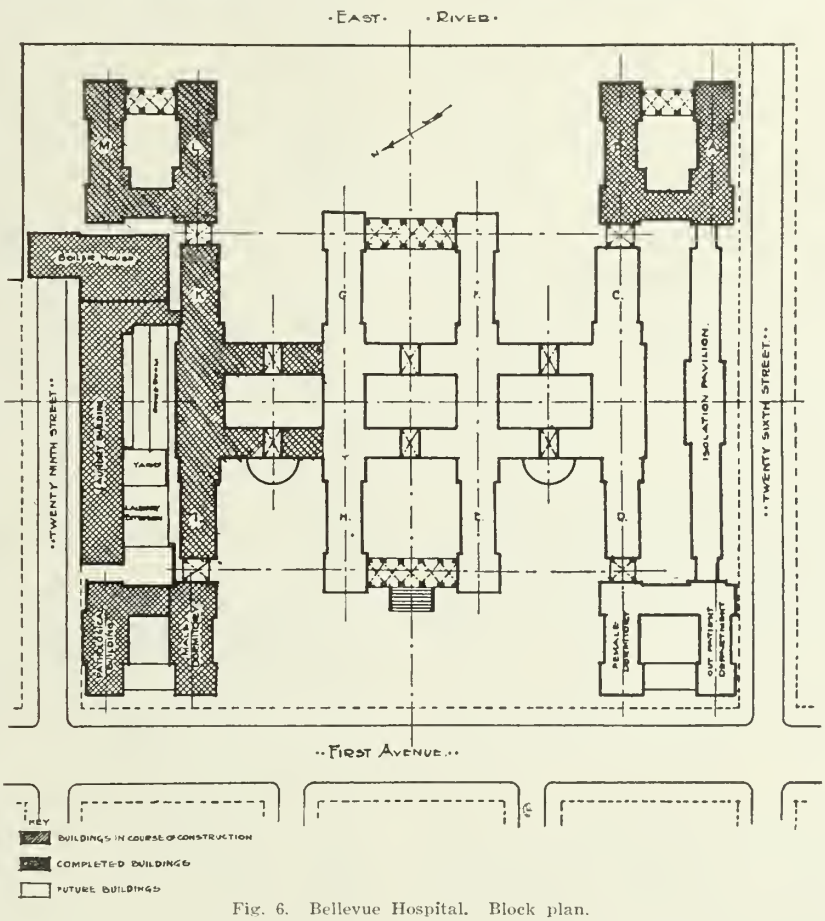


Fig. 6. Bellevue Hospital. Block plan.

In the old buildings, pendant fixtures with their direct light still prevail. Just when electricity was introduced in the old hospital is an uncertainty. It was probably in the late 90's that the installations were made in the wards, but until 1901 the section occupied by the staff quarters depended on gas. During its history, Bellevue has experienced every method of illumination that has been introduced in New York. One hundred years ago oil was used exclusively, then came gas, and finally electricity.

In common with almost all the other city institutions, Bellevue receives its electrical supply from the central station instead of operating its own generating plant. The three other hospitals of the Bellevue group—Harlem, Fordham, and Gouverneur—are exceptions to this rule, as these hospitals generate their own electricity. At Bellevue the power for all purposes during 1914 cost $113,397, or $82 per bed. At the other three the power costs per bed were $140, $110, and $135, respectively. These figures include not only electricity, but all other forms of power required.

During the one hundred years at the present locality and during the eighty years prior to that, Bellevue has contributed greatly to medical knowledge, and has been responsible for many changes in hospital practice, the greatest contributions to hospital administration having been made during the past seventy years.

In 1869 Bellevue established an emergency ambulance service, the first in the world. In 1873 a training school for women nurses was opened, which has since become known as the "mother of training schools" in this country. In 1887 a training school for male nurses was opened, and during 1912 the school for hospital attendants was created to take its place. A school for midwives is also conducted, and for more than sixty years the wards of the hospital have been open to medical students for bedside study. Yet more important than any of these is the fact that the hospital has been responsible for the establishment of the medical school which bears its name.

This, in brief, is part of Bellevue's record, and, with this record on which to build, it is not improbable that the new Bellevue will continue its scientific and administrative contributions on a scale that shall hold the institution to the place it has so deservedly won.

# HEATING SYSTEMS FOR HOSPITALS OF VARIOUS SIZES

## There Is a Choice of Five Different Principles—Heating the Small Hospital—Heating a Large, Compact Hospital—System for Long-Distance Transmission —Advantages and Disadvantages in Different Types

By MR. FRANK SUTTON, Consulting Engineer, New York

THE selection of a heating system for a hospital is too often treated lightly, and a large number of people pay little or no attention to it, and then, when a system has been installed without due consideration to existing conditions, they wonder why the system has proved so unsatisfactory.

The selection of a heating system is in every way as important as the selection of any other part of the equipment of a hospital, equally from the standpoint of cost of installation, mechanical perfection, and cost of operation.

There are at present a great many systems of heating which can be installed, some of which are applicable to one class of buildings, but entirely out of place in other classes. The writer will endeavor to explain the different systems and their best adaptation in as concise a manner as possible. The principal systems that can be considered would be as follows:

Steam—one- and two-pipe gravity return.

Steam—one- and two-pipe vacuum return.

Steam—so-called vapor systems.

Hot water—one- and two-pipe gravity circulation.

Hot water—one- and two-pipe forced circulation.

Now, which of these systems will the architect or the hospital management select for their building?

The first thing to consider is the size of the building, and whether the institution will be composed of one individual building, or whether there will be several buildings confined to a small radius, or whether the institution will consist of a group of buildings covering considerable area.

### HEATING THE SMALL HOSPITAL

It would be well to take up the question of the small hospital building accommodating from 25 to 100 patients. In a building such as this it is very evident that the mechanical equipment would be confined to a very small proposition—namely, the installation of cast-iron heating boilers to generate either steam or hot water, and, if high pressure steam were required for sterilizer work, it would be obtained either by the use of gas-operated sterilizer or a small high-pressure boiler. The high-pressure boiler would not be recommended, as it generally carries with it the employment of a licensed engineer, which is an added item of expense. It would further not be advisable to use a vacuum heating system or a forced hot water circulation system, because moving machinery must necessarily be used in connection with vacuum pumps and water circulating pumps. The question, therefore, would sift itself down to the use of either a plain steam gravity return system or a hot water gravity circulation system.

In connection with the so-called vapor systems, while these systems probably have their advantages, at the same time the writer is of the opinion that there is no particular advantage gained in installing a system in which certain pieces of patented material are required, and where this apparatus is apt, in a good many cases, to become disarranged and get out of order, thereby causing considerable trouble. There are, however, some vapor systems on the market which are claimed by the manufacturers to be very economical and simple in operation, but the writer is of the opinion that the simpler the heating system for this kind of building, the better.

As a general rule, a one-pipe steam system is not particularly satisfactory for the reason that, unless the system is very carefully designed and very carefully installed, there is apt to be trouble, due to the fact that the one line is used for both the steam and the return. The writer is, therefore, of the opinion that a two-pipe steam system would be preferable.

On a small building the question of keeping a constant steam pressure is of vital importance, and it is a matter of some difficulty to do this when the steam plant is operated by the janitor or left to some automatic device, the consequence being that the building is either overheated by the drafts being left open, or cold by the drafts being kept closed, due to nonattendance at the boiler. While this same thing would be true with hot water, at the same time, the hot water being more sluggish in its action, the same degree of variation would not be incurred; the temperature is more even, and in the writer's opinion more satisfactory in operation. I am, therefore, of the opinion that for a small building a plain gravity, two-pipe hot water system is the most desirable kind of an installation. The cost of such a system is only slightly in excess of the steam system, and

without a doubt in connection with the installation of a system in a new hospital building this extra cost would not be felt.

### HEATING A LARGE, COMPACT HOSPITAL

The next question to take up would be the installation of the heating system in a building of fair size, such as some of the modern hospital buildings, accommodating from 100 to 300 or 400 patients, but confined to either one large building or a group of buildings occupying such a space as a city block, or a smaller site.

In connection with such a building, any one of the systems mentioned in the first part of this article could be considered, although some of them would not be as satisfactory as others; for instance, there would be no advantage in installing a hot water gravity system, as the circulation would be very slow and it would be considerable time before the radiators responded, and then it would be very necessary in laying out a gravity hot water system to see that all lines were properly pitched in order that the piping would not be trapped, which would instantly cause trouble. It would, therefore, sift itself down to the use of the forced circulation system—that is, the water would be pumped by centrifugal pumps through the building.

The steam system would seem to lend itself more advantageously than hot water in this particular kind of building, but to a certain extent the same objection would be raised in regard to a gravity steam system, due to the length of time it would take for the steam to properly circulate through the radiators. It would, therefore, seem that the introduction of vacuum return valves, and the returns operated by vacuum pumps, would be the logical system to use in a building of this character. Of course, it is assumed that in connection with the mechanical equipment a high-pressure boiler plant would be installed and a licensed engineer would be in attendance.

The high-pressure plant would naturally be used, due to the fact that in addition to the steam required, which would be at reduced pressure for heating work, there is a large amount of steam used for other purposes, such as kitchen and laundry operation and the operation of sterilizers.

The other steam system, which has not been mentioned, is the one-pipe vacuum air line system, in which case the air is supposed to be taken from the radiator through a small air line connecting with some apparatus, such as a vacuum pump or a steam ejector, for discharging the air. This system, in the writer's opinion, is antiquated, and is, as far as known, going out of use and is not recommended. Mention is made of it in this article simply to show what has been done in the past.

In conclusion, therefore, in connection with this type of building, the writer is of the opinion that a two-pipe vacuum steam system would be the thing to use, although there is absolutely no objection to the use of a forced hot water circulating system, except in the increased expense in the cost of installing hot water heaters, as the water used in the radiator must necessarily be heated by steam from the boiler plant.

### FOR LONG-DISTANCE TRANSMISSION

The final question to be considered is in connection with the proper system of heating for a group of buildings extending over considerable area. In this instance it seems that the system to be used would be either a two-pipe vacuum steam system or a one- and two-pipe forced circulation hot water system.

It may be confusing to some that the term "one-pipe hot water system" is used in this work. This means that the so-called flow and return mains are tapped separately and two pipes taken from one of these mains and led to the radiator, it being, of course, understood that all hot water radiators must necessarily have two pipe connections, but that a very satisfactory installation can be made with the use of proper controlling valves where the one-flow main can be used for heating a number of radiators.

A vacuum steam system would work in a very satisfactory manner, provided the power house could be located at a lower elevation in order that the returns could be sent back to the pumps by gravity. Some people may ask why cannot the vacuum pumps pull returns up hill; and in some cases this has been tried, but it is most unsatisfactory to try to pump a mixture of hot water and steam vapor up grade.

### GRADES ARE IMPORTANT

Therefore, in laying out a steam system for a group of buildings, it is extremely important that the grades be so arranged that the returns will flow by gravity the entire distance. This is not so in the case of forced hot water, as a hot water circulating system, where the water is circulated by centrifugal pumps or by other form of pumps, the system is absolutely independent of grades, and it is immaterial where the power house is located—that is, a group of buildings could be in the valley, with the power house on a hill if so desired, but there would be absolutely no difference in the operation of the system. Another advantage with forced hot water would be that the mains, strange to say, would be smaller than steam mains, whereas the radiators would be somewhat larger.

The cost of installation of the forced hot water

system would be about the same as the cost of installation of a first-class vacuum return system. The writer is, therefore, of the opinion that more satisfactory results can be obtained by the use of forced hot water circulation in a group of buildings, such as described, than with any other system.

There are one or two other important points to be considered in connection with a heating system where a hospital either takes over some old building which has formerly been used for other purposes, or where the present steam system has become inoperative, due to the lines filling up with rust or other material.

In many instances, instead of taking out the system and installing a new one, a very satisfactory operation can be obtained by turning the gravity steam system into a vacuum return system, in which case the vacuum pumps can help out to a considerable degree by pulling the condensation through the lines. This is a good point to remember in connection with an old installation.

## THE NEW WESLEY HOSPITAL, KANSAS CITY, MO.

### First of a Large Group of New Modern Hospitals in the Making, This Institution Has Some Specially Notable Features—Built on the Block Plan—Has No Service Rooms on the Floors—Cost Extremely Low

By L. B. SIMPSON, of Keene & Simpson, Architects, and R. E. CASTELAW, M. D., Superintendent

THERE comes a time in the development and growth of every community when it is necessary to make a survey of all public and private activities. An inventory must be made, stock taken, books balanced; it must be definitely determined just how things stand. The cost of service must be established, the leaks and sources of waste located, and new standards of efficiency adopted. The citizens of Kansas City, both professional and lay, invoiced the local hospital situation a few years ago and decided that it was time for a complete overhauling. As a result of this investigation, this city has either just completed or in the course of construction a half dozen fine modern hospital buildings. These new plants have doubled the capacity of the private hospitals, and, as might be expected, have completely upset old established methods.

Until within the last few years neither of the Kansas Citys, with a population of at least half a million, could present a hospital that in any way met the demands made on it. The profession and city had entirely outgrown the available hospital service—the buildings were old, unsafe, and unsanitary; and, without assuming a critical attitude in the matter, all of those interested agreed that there was nothing to encourage the people of this locality to send their sick to our hospitals for care, and neither was there anything to stimulate real scientific effort on the part of the local profession. A complete reconstruction and reorganization of plans to furnish hospital service to the people of this community was demanded. New, fireproof sanitary buildings must replace the old structures. The ethical standards must be raised, the laboratory facilities increased, and the nursing service improved. The new order of things should correct many of the evils which have existed so long in Kansas City, and not only furnish the opportunity to the local profession for some genuine scientific effort, but the entire country tributary to this city will be vastly benefited.

The first of the new group of the larger buildings to be opened to the public was Wesley Hospital, the subject of this sketch. This institution was ready for occupancy and was opened to the public January 1, 1916. Wesley Hospital succeeded the Women and Children's Hospital, which passed out of existence in 1907, and the present corporation was organized by Dr. J. Archie Robertson in the fall of that year. The new hospital is a result of the demand of the patrons of the institution for a larger modern plant.

Wesley Hospital is a down-town hospital, being located at Eleventh and Harrison streets, just a few blocks from the retail shopping district. It is conveniently located to seven street car lines, four of which pass within one block; two are direct Kansas City, Kansas, lines, and another is a suburban line from Independence. Eleventh street is also the principal thoroughfare east and west for all vehicle traffic. The lot upon which the hospital is located has a frontage of 160 feet on Eleventh street and 100 feet on Harrison street. The main entrance to the hospital is on Eleventh street and almost on the street level.

The building is what is known as the block plan, 155 feet long by 45 feet wide, five stories high, and without a basement. The building is a fireproof structure, with reinforced concrete frame. The exterior is of dark wire-cut brick, with terra cotta trimmings and marble columns at the main entrance. Advantage was taken of the slope on Harrison street, which provides a driveway to

Fig. 1.

the ambulance entrance on the north side of the building and on the second floor of the hospital; which plan delivers the patient direct to the elevator without disturbing the offices or reception room on the first floor. On the Eleventh street side the main entrance is only a foot above the street level, and the elevator is reached through the reception hall without climbing stairs.

On the first floor are located the superintendent's office, the bookkeeper, and telephone switchboard, general dining room, main and diet kitchens, graduate nurses' rest room, sewing room, class room, pharmacy, isolation room for emergency, contagious, or noisy cases, and a room for the house physician. On the second floor is an emergency operating room at the ambulance entrance, which is also used as an examination and cystoscopic room. The west wing of the fifth floor is the main operating room suite, while the east wing is given over to maternity service. On all floors are also located a chart and signal room, small diet kitchen and service room.

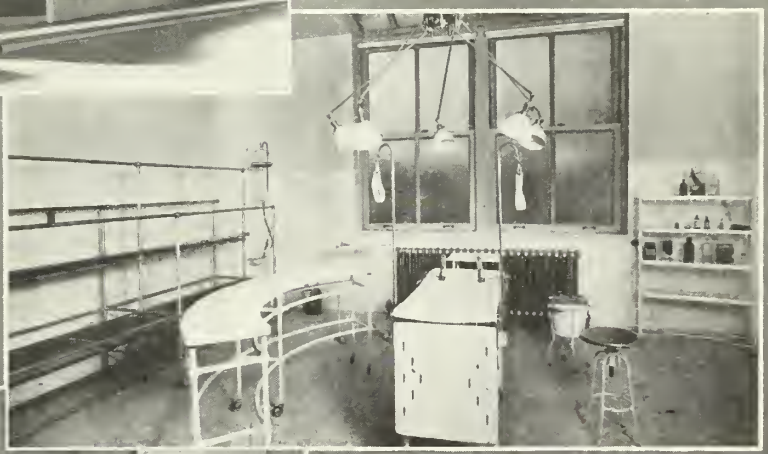

Fig. 2.

At the east end of each floor is a large sun room, equipped with swinging windows. The sun rooms are connected by fireproof stairways, and can be shut off from the hospital corridors by heavy fire-

Fig. 3.

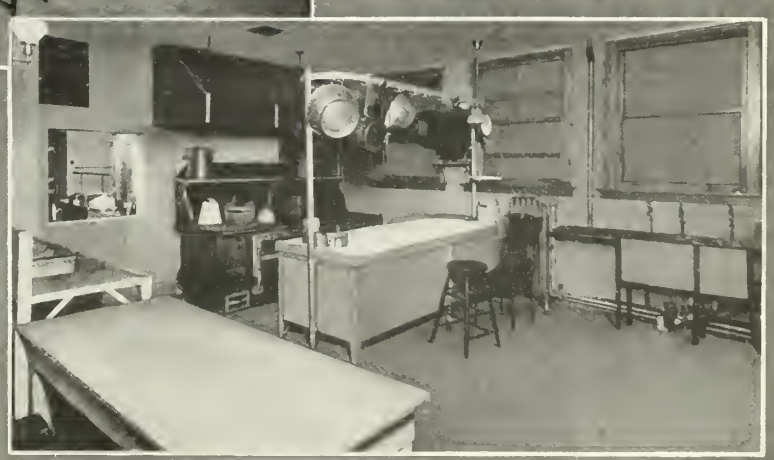

Fig. 4.

Wesley Hospital, Kansas City, Mo. Fig. 1—Main entrance. Fig. 2—One of the three operating rooms. Fig. 3—Part of the x-ray unit. Fig. 4—Main kitchen.

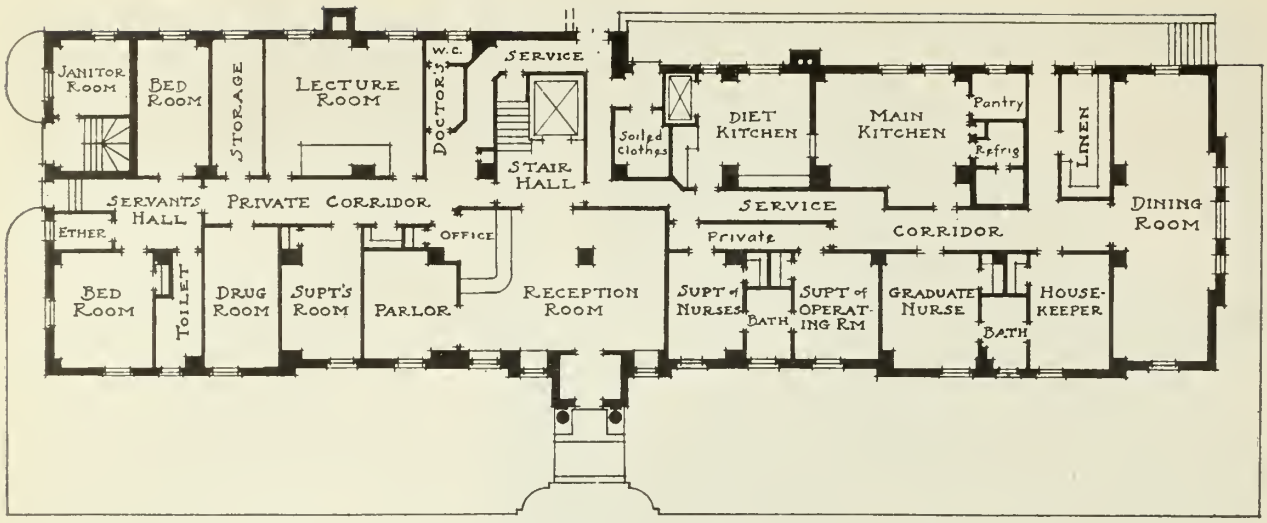


Fig. 5. Wesley Hospital. First floor plan.

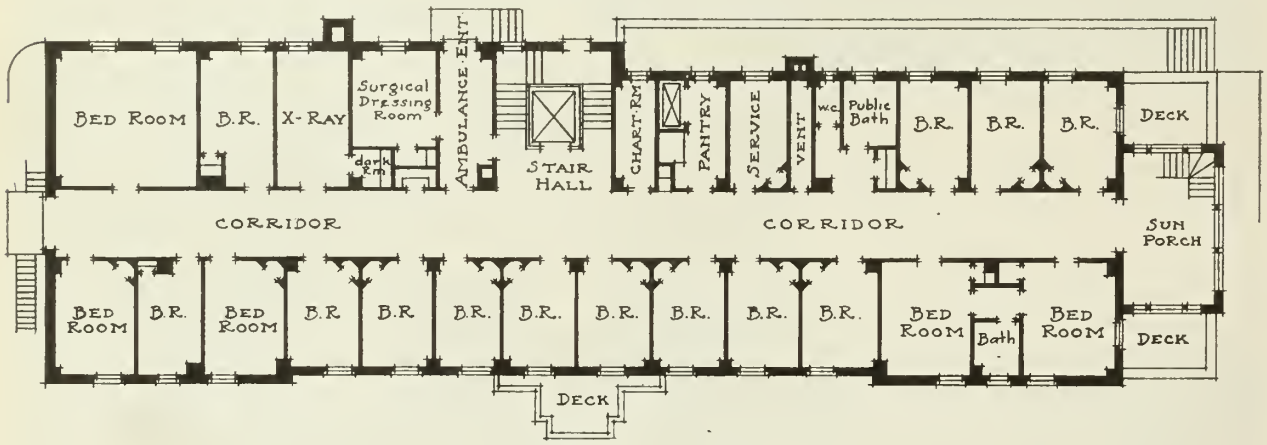


Fig. 6. Wesley Hospital. Second floor plan.

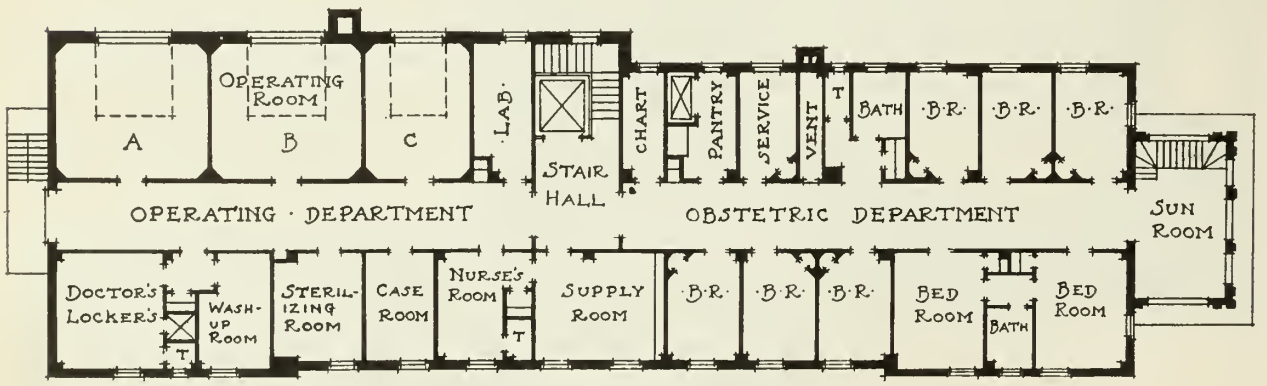


Fig. 7. Wesley Hospital. Fifth floor plan.

proof doors, which provides additional fire protection.

The operating department consists of three large operating rooms, with an abundance of unobstructed north light. Each room is equipped with a gas and oxygen outfit, the supply for which is piped from a main tank in a closet provided for that purpose in another part of the building. The floors of the operating rooms, the hall, and sterilizing room are 6-inch hexagonal vitreous tile, and the wainscoting is of marble extending 8 feet from the floor. The walls are of extra hard Keene cement. The doctors' dressing room is equipped with shower bath and individual steel lockers. The washup room is opposite the operating rooms and has the foot-regulating fixture on bowls. Two work rooms for the nurses, an instrument case room, the hospital laboratory, and a steam pipe closet for heating blankets complete the suite.

The trash chute is located near the center of

the building and has an outlet on each floor. Each opening is covered by a cast-brass nickel-plated hinged door, fitted with a rubber gasket, which insures an absolutely tight door at all times. The chute proper is of vitreous sewer pipe, which leads to the garbage burner in the engine room. Two galvanized iron linen chutes, one in either wing, lead to soiled linen rooms on the first floor. A complete intercommunicating telephone system connects all departments. A refrigerating plant provides three tons of ice daily, and cools the floor and kitchen refrigerators. Bubble drinking fountains tap the cooling system on each floor and furnish cool water for general use.

Each floor is equipped with the Holtzer-Cabot system of nurse calls. All door frames are steel, with sides of the frames forming a casing flush with the plaster. The doors are solid slab in wood and metal, and, aside from these wooden doors and some of the windows, the only wood in the building is the shelving and the furniture. The floors of the rooms are cement, with a cement hardener, and the floors of the corridors that are of cement are covered with battleship linoleum. The partitions are steel studs, plaster boards, and hard plaster. The inside of the building is painted with three coats of lead and oil.

The rooms are ventilated into the corridors, and then into a large ventilating shaft near the center of the building. This shaft is also used to run pipes and wires between the floors. A cast-iron metal platform is provided at the level of each floor for workmen to stand on when making repairs or alterations in the shaft.

Two rooms on each floor are provided with a private bath or can be thrown en suite. Six rooms on each floor are equipped with telephones and lavatories. All other rooms are roughed in for future lavatories and telephones. Each bed room is equipped with an examination light and semi-indirect lighting fixtures.

There are no regular diet kitchens on the different floors, as all the food is prepared in a large diet kitchen on the first floor. At serving time labeled trays are loaded on carts of sufficient size to serve at least a half floor. These are dispatched on an electric elevator, which is controlled entirely in the main diet kitchen. This plan has many advantages, and there is little or no complaint about the food being cold.

The original plan for this plant provided a basement under the entire building, but a more careful analysis of the lay of the lot demonstrated that a scheme could be worked out which would provide at least five additional bed rooms at the same cost if the basement plan were abandoned. There is, however, under the northwest corner of the building a small basement, in which are located the heating and other mechanical devices. The equipment there consists of two large boilers of sufficient size to meet the demands of any future addition to the building, the refrigerating plant, garbage burner, and a small high-pressure boiler which furnishes steam for sterilizers and steam tables. The heating plant is of the two-pipe vacuum system. The engine room is completely shut off from the hospital, and can be reached only by first stepping entirely outside the hospital and then to the door leading to the engine room. The hospital elevator is automatic, and power is furnished by a 20-horse power motor.

The capacity of the hospital is 105 beds. The cost of the building, ground, and equipment was $135,000.00. The building is designed to carry two additional stories containing 27 beds each. Space is also provided to the north of the present building for an addition of a wing 40x60 feet. A detailed statement of the cost of construction and equipment follows:

| | |
|---|---|
| Contract on building | $60,000.00 |
| Plumbing and heating | 11,000.00 |
| Electric wiring | 3,000.00 |
| Total | $74,000.00 |
| Screens | $ 750.00 |
| Refrigerators | 500.00 |
| Cooling plant | 2,250.00 |
| Hardware | 800.00 |
| Electric fixtures | 800.00 |
| Weather strips | 500.00 |
| Elevators | 4,500.00 |
| Shades | 150.00 |
| Total | $10,250.00 |
| X-ray equipment | $ 2,750.00 |
| Sterilizers | 1,400.00 |
| Kitchen equipment | 1,200.00 |
| Furnishings | 20,000.00 |
| Total | $25,350.00 |

The cubic foot cost was 20 cents. The cost of equipment per bed was about $225.00.

The nurses' home is located on the north side of the lot, facing Harrison street, and is connected with the hospital by a tunnel, which passes under the ambulance drive. The basement floor of this building is on the same level with the first floor of the hospital. The home is 25 feet wide by 112 feet long, and has accommodations for sixty nurses. The architecture and general construction match the hospital. This building contains store rooms and a few sleeping rooms for hospital help. It will be heated by the hospital plant, and all pipes and conduits will pass through the tunnel which connects the buildings. The cost of this building, with its equipment, was $20,000. The cubic foot cost was about 12 cents.

The affairs of the hospital will be under the immediate direction of the superintendent, who will

report to the board. The training school and nursing service will be in charge of the director of the school. A salaried resident physician and pathologist has charge of the hospital laboratory, and will be at the service of the attending physicians.

The Wesley Training School for Nurses was the first school in this section to adopt the three-year graded teaching course. The school has a capacity of sixty pupils, and every effort is made to maintain a high standard of entrance requirement and conduct a plan of teaching that will keep the school in the first class. A carefully prepared course in hospital dietetics and operating room technic are given special attention. The school faculty is selected from the attending physicians, and paid teachers are employed in the elementary branches.

For the present the service will be open to the recognized ethical members of the profession. Some time in the future it may be decided to close the staff, or at least a portion of it.

It is estimated that about 90 percent of the work is surgical, but complete diagnostic equipment has been provided to meet the requirements of all cases. The x-ray and photographic rooms are especially well equipped.

## SOME GLARING FAULTS IN HOSPITAL CONSTRUCTION

### A New Building in a Large City, With a Board of Learned and Experienced Business Men, Practiced False Economies, Wasted Much Money, and Got a Poor Hospital

By MR. CHARLES F. NEERGAARD, Brooklyn, N. Y.

THIS is the story of what a layman saw—one of a building committee planning a new hospital. To learn what to do and what not to do, I visited many new hospitals to profit by the experience of others. This tale deals with a nearly completed hospital in a large city, and, while necessarily frank in its criticism, is written solely with the sincere desire to help others who may be concerned with hospital construction. Should any who are interested in this particular institution recognize it from the description, will they accept the writer's apologies for his presumption?

The site was an entire block in the central portion of the city. The work had been started three years ago. It was not a large plant. The administration building and a single wing under construction should easily have been erected in a year. They were still months from completion. What caused the delay I do not know, but delays in building are expensive. There were pleasing features about the design, but, as this article aims to draw a lesson and point a moral, I shall confine myself to the faults—which were many and glaring.

In building an institution with public funds or with charitable bequests, I take it as an axiom that the money put into buildings and equipment should be expended with the same careful consideration as the investment of endowment funds, which are carefully guarded by law. A wealthy benefactor may permit elaborate architectural features in a memorial building, but reckless extravagance should be proscribed in an institution erected by public subscriptions. This organization was conducting a wide-spread campaign for funds to complete their plant at the time of my visit, which would indicate that the extravagance and structural mistakes of which I write are properly open to criticism.

The administration building was semicircular in shape and one story in height above the basement. Of the available floor space on the main floor, two-thirds was devoted to an ornate entrance foyer—most charming, but most inappropriate if expense was any consideration. Its wealth of plaster panels, pilasters, and fancy cornices were expensive to execute because of the many and graceful curves in the design. The wainscot was of imported Italian marble, which must have cost $2 or $3 per square foot. The remaining one-third of the available space was divided between a corridor connecting the wings and a small administration office, lighted only by an overhead skylight. Surely the working force was entitled to some windows for light and ventilation. It seems inexcusable that such an extravagant architectural design for this building should have been accepted by a board of trustees who had not sufficient funds in sight to complete their plant.

The ward unit was two stories in height above the basement, with an elaborate solarium on the roof. The rooms and wards, of themselves, were

[Editor's Note—Mr. Neergaard is trustee of a Brooklyn hospital, and also the president of a large building corporation. He prepared this article at the special request of The Modern Hospital, and, in closing his letter transmitting the article, says: "My closing suggestion, that a practical builder go over the plans, or be a member of the Building Committee, would, I think, do more to insure satisfactory results in hospital construction than almost anything else. In all of our own work we have treated the architect as a subcontractor—that is, he has done the designing and drafting work after we had laid out the floor plans. We have never given the architects the supervising or any control over the practical engineering work. By this method we have been quite successful in turning out practical buildings that have come reasonably close to the amount of money that has been appropriated. My experience has been in the line of residence, school, and factory buildings rather than in hospital work, but I feel sure that the greater the problem the more successful would be this method of attacking it."]

well proportioned, save that the ceilings were unnecessarily high, and a dead air space above the ventilating points was a bad feature. No provision was made for natural ventilation, and no transoms were provided at doors or windows, but the touch of the "expert engineer" was everywhere all too apparent.

The mechanical ventilating plant was of the most elaborate and magnificent proportions, seemingly large enough for an office building. Two huge fans were located on the top floor to pull the air through the rooms through ducts opening 4 or 5 feet *below* the ceiling, and a mighty machine in the basement served to warm and wash the incoming air and force it up through another set of ducts in the lower part of the walls. With light on three sides, in a small two-story building, why all this elaborate installation when natural ventilation is so available and so inexpensive? This plant may be all right, but I understand that, of the many mechanical ventilating equipments of this sort in hospitals throughout the country, none are operated satisfactorily and economically, and one open window breaks the circulation. Considering the maintenance cost alone, could such an expensive installation be considered a wise expenditure of funds?

The corridors were some 14 feet wide, and this in a ward wing having not over 40 beds to a floor. Spacious, beautiful, but every foot costs money to build and maintain, and every added foot over and above the necessary minimum is only an extravagance.

I noticed many stains and marks of dampness on the outside walls, and at an unplastered spot discovered the reason. The walls were not furred, the plaster being applied directly to the brick. True, a course of hollow brick (not tile) lined the wall, coated with some waterproofing compound. This may for a time keep out bad leaks, but it will not insure against seepage and sweat from condensation. Why, oh, why, will architects persist in using this faulty form of construction, and in a hospital, of all places, where dampness means unhealthful conditions, and is unpardonable! It may pass in factories or in a cheap speculative building, but never in a hospital. A furred air space between the outside wall and plaster is the only safe protection against dampness, and should be insisted on in every hospital building. A china pitcher or a metal pail is waterproof and watertight, but fill it with ice water on a summer's day and see how the outside is soon covered with moisture; a wall acts the same way. Over the top floor corridor was an unventilated light well, roofed over with glass bull's-eyes, which I predict will be a source of constant annoyance from moisture and sweat, which was present even then on a bright, sunny day.

Many features covered by the specifications showed reckless disregard for economy. The door trim throughout was of white enameled iron. These are at least double the cost of an appropriate wood trim. Many of the frames were chipped, discolored, and rusted from the dampness in the plaster. Once the enamel is chipped off, it cannot be properly repaired and will always show a patched job. The floors were of terrazzo, with Tennessee marble borders. The stairs had marble treads, with white cement risers. Imagine the labor of keeping those risers spotless. The wainscot in the baths and toilets was of Tennessee marble; fine, but unnecessarily expensive.

The plumbing and heating equipments, while of the most expensive quality, were installed in a manner which would hardly be tolerated in a tenement. It really seemed as though the architect and the engineer, if the work was so divided, had no speaking acquaintance, and that the plans were drawn with no consideration for piping. Practically all of the soil pipes and traps from the upper floor were exposed in the ceiling of the floor below. Imagine an operating room with a large trap and an 8-foot run of soil pipe pendant from the ceiling! Yet here it was! The vapor heating plant, which supplemented the warmed air ventilating system, showed the same disregard of the A B Cs of good installation. The risers and radiators in many instances had apparently no preconceived relationship. Instead of close connections, the feed and exhaust lines ambled aimlessly around the base. In many of the rooms the radiators were hung 6 feet above the floor, their permanent location. The reason for this I could not fathom. Certainly the disadvantages were apparent. Imagine a trained nurse of even average height having to reach over 6 feet in order to operate a radiator valve, and, besides, the rambling pipes had not only to follow the base, but go up from the floor to the radiators and back. Surely common sense, even if experience was lacking, should have tabooed such conditions in a hospital. Another flagrant example of wasted money was displayed in the heating plant. A temporary boiler was set up in a temporary outside building to dry out the plaster and heat the hospital until the permanent plant could be designed and built. Surely foresight should have dictated at least a permanent heating unit instead of wasting $5,000, which I was told the temporary installation cost.

In the basement of the administration building was the engineer's room, housing vacuum cleaner, sewer pump, brine pump, and the like. It was a dark room, with no outside light and ventilation,

although such might readily have been provided. The only opening was the doorway, framed in the same expensive enamel trim as the rooms above. Now, the engine room is usually a hot place, even where there are no boilers, and ventilation is essential. To accentuate the natural heat from the engines, there were provided six radiators to keep the engineer comfortable, and radiation costs at least $1 a foot. The engineer's and male help's toilet adjoining was entered through the same enameled iron doorway, and was wainscoted 6 feet high with the expensive Tennessee marble. No false economies for the engineer's department.

To a man who has had experience in building, these examples of mistakes and extravagances, which so often occur, may sound familiar. In a hospital directed by a board of trustees they seem inexcusable. To one of experience they are a strong indictment of either the ignorance or incompetence of the architect, and show a lack of proper study of the plans, specifications, and costs before letting contracts and proceeding with the work. Surely those responsible for this hospital can hardly face their public with equanimity when they see the result of their work, and the pity of it is that 90 percent of these faults might have been foreseen and avoided by the employment of a competent architect, or by giving a practical builder an opportunity to pass on the plans and specifications before their final adoption.

Planning a hospital plant is the most complicated of architectural and engineering problems. It unites all of the features of a hotel with the technic of hospital treatment and administration. It must combine the practical and the sanitary to a high degree, not neglecting the esthetic, nor disregarding the funds available. To such problem should be brought trained minds, with practical experience and judgment. In the writer's most humble opinion, the most valuable member of a hospital building committee would be a disinterested practical builder.

## MUNICIPAL RECEIVING HOSPITAL FOR DETROIT, MICH.

### Institution Built in the Heart of the Business District Intended to Care Immediately for Emergencies and to Be Clearing House for the City Hospital—Psychopathic Ward One of the Special Features

By JOHN SCOTT, of John Scott & Co., Detroit, Architects

THE new Receiving Hospital for the city of Detroit, completed for the Board of Poor Commissioners, is intended for the care and treatment of emergency cases and as a clearing house for the general city hospital.

Under the past arrangement the commission had agreements with different hospitals in the city and distributed patients as they found accommodations available for them. In cases of accidents, prostrations, or other emergencies the patient was removed by the police patrol or the first ambulance that arrived to the most convenient hospital, often resulting in confusion and delay. The new Receiving Hospital is equipped with an adequate ambulance service, which will obviate these difficulties.

The hospital building is located in the center of the city on the northeast corner of Macomb and St. Antoine streets, a four-story building 168 feet by 51 feet, with a wing on the north 47 feet by 56 feet. This wing contains the receiving and operating sections and psychopathic wards. In the main building are the administration offices, sick wards, and quarters for the staff.

The building is of steel and concrete fireproof construction, finished on the exterior with cream-colored brick and stone. The basement, 10 feet high in the clear, is well out of the ground, admitting windows of ample size for light and air to the power plant, kitchen department, and laundry. The building is steam heated by a vacuum return line system from two boilers in the north wing. The pumps, filters, and heaters for the water supply of the building are located in the boiler room. The coal bunkers are outside the wall of the building.

The kitchens and supply and service rooms are in the east end of the main building, with a separate entrance from the outside to the receiving room, which connects directly with storage rooms and refrigerators adjacent to the kitchens. The arrangement is designed to facilitate the preparation of the food and the transportation to the three automatic dumbwaiters serving the different sections of the floors above. In this section of the basement the dining rooms for doctors and nurses are also located.

The laundry and sterilizing and dry rooms are placed in the west end of this wing, and are equipped with modern motor-driven apparatus. Adjoining the sterilizing room is a locker room for the storage of the patients' clothes until their discharge from the hospital. Other rooms in the basement are a large experimental laboratory, re-

frigerating and ice-making machinery, and store rooms. The suspect rooms and mortuary chamber under the receiving section are connected with a separate stairway to the outside and to the first floor.

Fig. 2.

Fig. 3.

The general administration offices are just off the main entrance on Macomb street, and the patients' and receiving entrances are from St. Antoine street. A study of the arrangement of these entrances will explain the operation of the hospital as developed by the plan.

Fig. 1.

Fig. 4.

The ambulances unload under a covered porch, connecting directly with the waiting room and doctor's examination room. Immediately connected with these are two bath rooms and a completely equipped minor opera-

Fig. 5.

Receiving Hospital, Detroit, Mich. Fig. 1—Exterior view. Fig. 2—Operating room; note lighting fixtures. Fig. 3—Men's ward. Fig. 4—A reliable feature of the hydrotherapeutic rooms. Fig. 5—The kitchen.

Fig. 6. Receiving Hospital. Basement plan.

1. Laundry.
2. Soiled clothes room.
3. Infected clothes.
4. Patients' locker room.
5. Stair hall.
6. Elevator.
7. Service room.
8. Boiler room.
9. Coal bunker.
10. Suspect room.
11. Morgue.
12. Receiving room.
13. Kitchen.
14. Nurses' dining room.
15. Doctors' dining room.
16. Machine room.
17. Store room.
18. Laboratory.
19. Linen room.
20. Corridor.

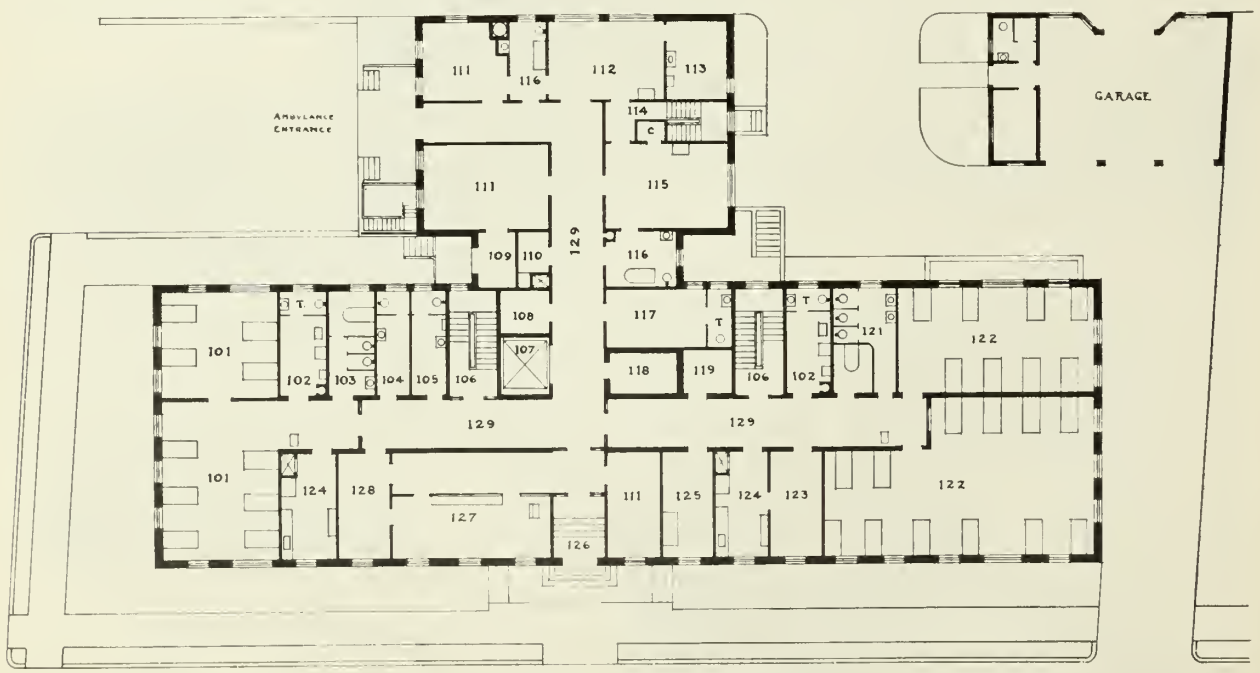


Fig. 7. Receiving Hospital. First floor plan.

101. Women's ward.
102. Sink room.
103. Women's toilet and bath.
104. Women's toilet.
105. Men's toilet.
106. Stair hall.
107. Elevator.
108. Store room.
109. Ambulatory entrance vestibule.
110. Clothes room.
111. Waiting room.
112. Emergency operating room.
113. Sterilizing room.
114. Stair to detention rooms and morgue.
115. Doctors' examination room.
116. Bath room.
117. Visiting doctors' room.
118. Vault.
119. Linen room.
121. Men's toilet and bath.
122. Men's ward.
123. Men's dining and day room.
124. Serving room.
125. Men's private room.
126. Entrance.
127. General offices.
128. Superintendent's office.
129. Corridor.

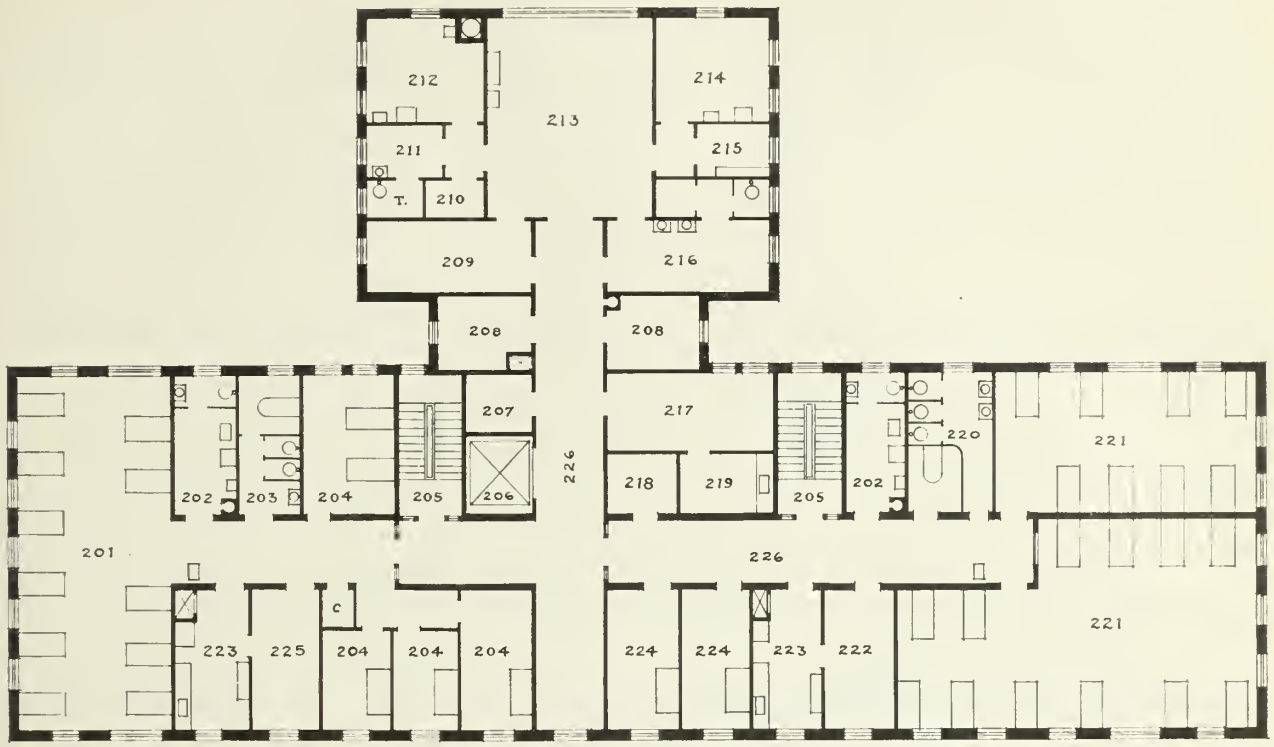


Fig. 8. Receiving Hospital. Second floor plan.

201. Women's ward.
202. Sink room.
203. Women's toilet and bath.
204. Women's private room.
205. Stair hall.
206. Elevator.
207. Store room.
208. Recovery room.
209. Anesthetic room.
210. Supply room.
211. Nurses' room.
212. Minor operating room.
213. Operating room.
214. Sterilizing room.
215. Instrument room.
216. Doctors' examination room.
217. X-ray room.
218. Linen room.
219. Dark room.
220. Men's bath and toilet room.
221. Men's ward.
222. Men's dining and day room.
223. Serving room.
224. Men's private room.
225. Women's dining and day room.
226. Corridor.

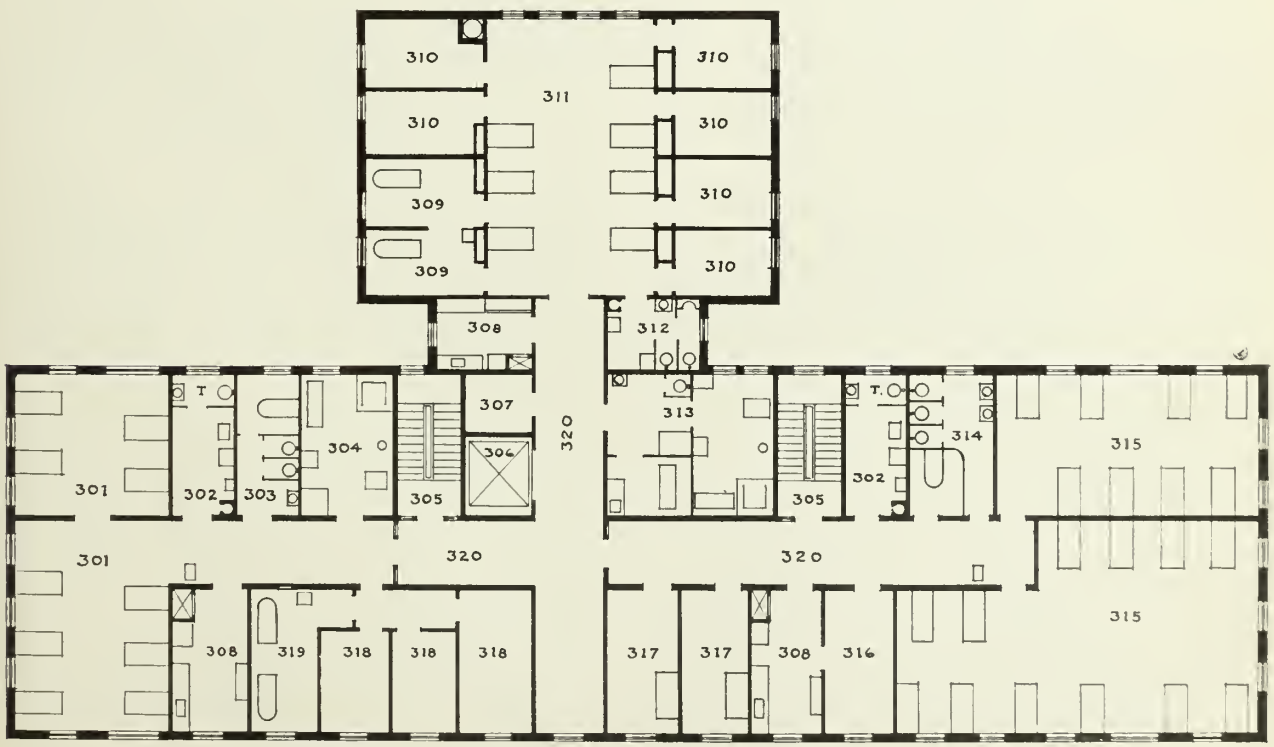


Fig. 9. Receiving Hospital. Third floor plan.

301. Women's ward.
302. Sink room.
303. Women's toilet and bath.
304. Women's hydriatic room.
305. Stairway.
306. Elevator.
307. Store room.
308. Serving room.
309. Men's continuous bath.
310. Men's disturbed ward.
311. Men's psychopathic ward.
312. Toilet and sink room.
313. Men's hydrotherapeutic department.
314. Men's toilet and bath.
315. Men's ward.
316. Men's dining and day room.
317. Men's private room.
318. Women's disturbed ward.
319. Women's continuous bath room.
320. Corridor.

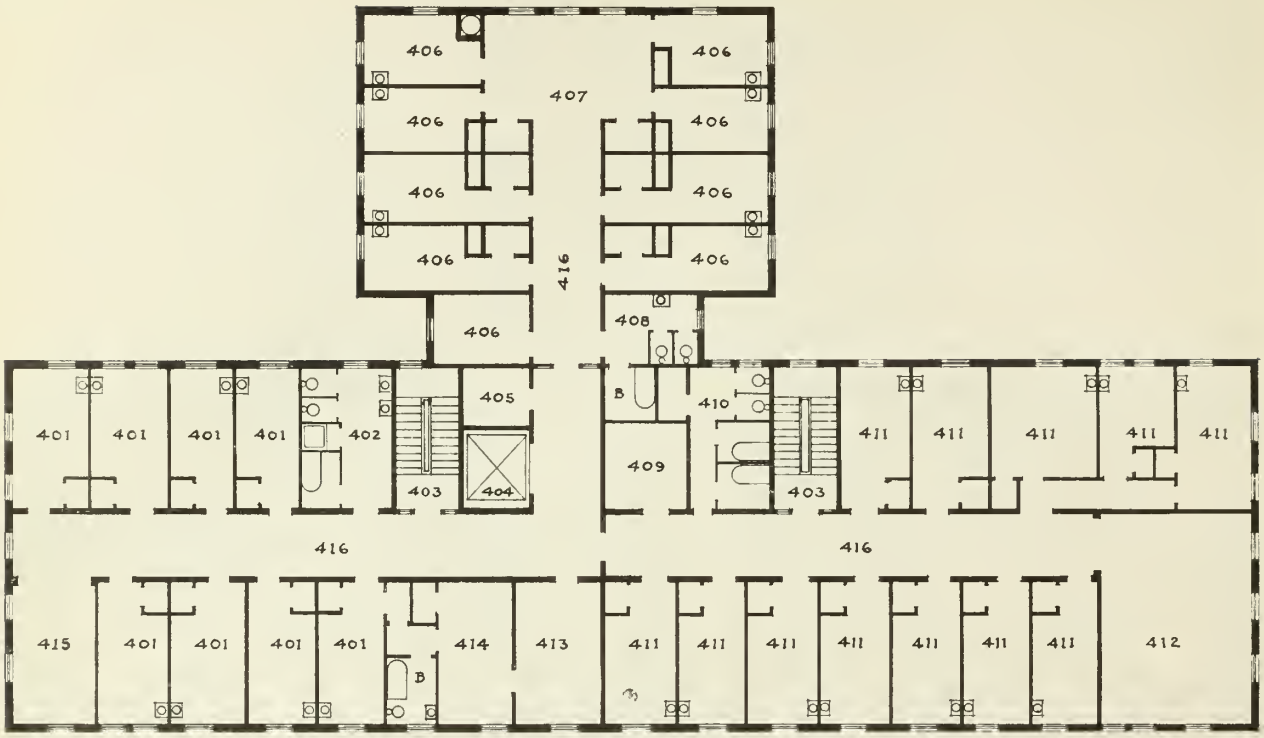


Fig. 10. Receiving Hospital. Fourth floor plan.

401. Interns' bed room.
402. Interns' toilet and bath.
403. Stair hall.
404. Elevator.
405. Store room.
406. Help's bed room.
407. Help's sitting room.
408. Help's toilet and bath room.
409. Linen room.
410. Nurses' toilet and bath.
411. Nurses' bed room.
412. Nurses' sitting room.
413. Doctors' sitting room.
414. Doctors' bed room.
415. Interns' sitting room.
416. Corridor.

tion room for urgent cases. A separate stairway leads from this section to the room for suspect cases in the basement.

The ambulatory patients' entrance admits to a large waiting room connected with the examination room. In the corridor adjoining is a small room for patients' clothing, with a chute to the basement. Visiting doctors are provided with a special room centrally located and communicating with all parts of the building.

The men's ward section on the first floor accommodates 21 patients, with serving rooms, dining and day rooms, bath and toilet rooms, and sink and linen rooms. The serving rooms have a dumbwaiter, sink, refrigerator, china closet, and tray racks, and a gas outlet for special diet cooking. The sink rooms are fitted with china sink, laundry tray, sterilizer, and incinerator. The clothes chute leading to the basement is located in this room, and is provided at each floor with a specially designed metal hopper door in an 18-inch diameter glazed tile chute. The women's ward section in the west wing of this floor has accommodations for 10 patients, with the various accessory rooms, similar to the men's section. The remainder of the first floor is assigned to the general administrative offices, vault, store rooms, etc. Eight-foot corridors connect all departments from which lead stairways and elevator service to the basement and all floors.

The second floor arrangement of wards and service is similar to the first floor, with the addition of six private rooms for men and women, and dining or day rooms for men and women. This floor has 22 beds for men and 16 for women. The entire north wing of this floor is occupied by the operating section. The main operating room is at the end of the corridor, the north side being lighted by a steel casement window the full width of the room, and the room wainscoted 6 feet high with white glaze tile. Connecting with the operating room and the corridor is the anesthetizing room, and similarly situated on the opposite side is the doctors' room, with surgical lavatories, toilet, and shower room. A minor operating room, nurses' room, supply room, and toilets connect with the main operating room through a small vestibule.

A sterilizing room on the opposite side has a modern water sterilizer of 50 gallons capacity, with instrument, dressing, and utensil sterilizers and a blanket warmer. A small room adjacent is provided for instruments. Opening into the corridor are two recovery rooms and an x-ray laboratory, with dark room.

The arrangement of the men's and women's wards and service are practically similar to the floors below. The hydrotherapeutic department and psychopathic wards are situated in the north wing of this floor. The sick wards have accommodations for 22 men and 10 women, and the psychopathic and disturbed wards for 13 men and 3

women. The latter comprises a main ward, two private rooms, and four disturbed rooms, fitted with soundproof partitions and double doors. Under the direct supervision of the nurses, this ward has a bath and toilet room and two continuous bath rooms. A serving room is also provided. Opening off the corridor and near the elevator is a complete hydro room for the hydrotherapeutic treatment of men patients in this department. This room is wainscoted in marble, with 7-foot marble partitions dividing it into three parts, the largest containing the shower and needle bath, shampoo and table, sitz bath, perineal douche, and attendants' control table. In the other parts are the pack table and sink, hot air cabinet, water closet, laboratory, etc. The women's hydriatic room off the west corridor is similarly equipped, and directly across the corridor are three rooms for disturbed patients and a continuous bath room with two tubs. All windows in the psychopathic department and hydro rooms are double-hung steel sash, with wire plate glass in small lights. All disturbed rooms and continuous baths are under direct supervision through small windows into the corridor. On all floors the nurses' stations are situated at the end of the corridor adjacent to the wards, and are equipped with desk, medicine cabinets, and sink, and the automatic "silent call" signal system and telephone.

The interior finish is designed to facilitate easy cleaning. The floors are of terrazzo throughout, finishing on walls, with a cove base on all walls. Interior door frames are of steel, finishing flush with the wall surface. The windows are finished with plastered jambs and sloping stools. All interior wall and ceiling angles are finished with a cove, the surface painted and finished with a flat varnish finish. The stairways are of steel construction, with terrazzo treads and risers, eliminating ledges and corners.

The building is ventilated by a plenum system, the supply and exhaust ducts being located in the partitions and connected with motor-driven fans in the attic. The fresh air intake is on the roof of the north wing, from which the air taken is washed and tempered before being supplied to the various rooms. The vitiated air is removed by ducts, with intakes at the floor, and discharged above the roof of the main building.

The lighting system is of the most approved hospital type, the ward lights being on two circuits for the regulation of the intensity. The plumbing fixtures are of the highest grade, especially designed for hospital use.

The entire fourth floor is assigned to quarters for the hospital staff—a suite of rooms for the resident physician and three general sections for nurses, interns, and help's quarters, each division having a large sitting room, baths and toilets, linen rooms, etc.

## THE SMALL COMMUNITY HOSPITAL—ITS CREATION[1]

### The Survey of the Town as to Its Needs—The Kind and Size of Hospital—Its Funds for Building and Maintenance, How to Be Raised—The Charter, the Organization, the Trustees and Their Election

By JOHN ALLAN HORNSBY, M. D.

FEWER than 12 percent of the sick people of this country are using the hospitals; all the others are being taken care of in their own homes. Considering the fact that bedside diagnosis and drug treatment are pretty nearly obsolete and that modern diagnosis of disease is a question of the various hospital laboratories, and that treatment has to do with diet, physical therapy, and good nursing, it naturally follows that 88 percent of the people in this country who become sick are not getting the right sort of care; consequently they are not getting well as promptly as they should, and more of them are dying than should die, and there is a far greater amount of suffering than there would be if everybody who was sick was getting proper and prompt attention.

A good many thoroughly informed men and women have a feeling that every hospital in the land should be architecturally as good as modern science can make it, and that the equipment should include all that medical science can call for in the diagnosis and treatment of disease; that hospitals which cannot have all these advantages should close their doors, and the work which they are attempting to do should be turned over to hospitals that *are* properly built and well equipped. Perhaps if this idea were carried out, we might get along faster toward a day when there will be adequate hospital accommodation for all the people; but in the meantime a great mass of humanity would have to remain at home and suffer and die for want of proper nursing and adequate treatment of disease, because, after all, the cold fact is that hospital equipment today is far less a matter of inanimate apparatus and instruments than it

[1]This is the first of a series of six papers on "The Small Community Hospital—Its Creation, Maintenance, Organization, and Administration." Next month the financing of the hospital in all of its various phases will be taken up.

is a matter of skill and capacity on the part of the hospital workers. In other words, a competent pathologist with a microscope and $10 worth of apparatus will do far better work than an indifferently trained man with the completest laboratory ever designed.

We cannot possibly agree with the idea that, because a community is poor and unable to afford the funds for the building and equipment of an ideal hospital, the people of that community should be deprived of even a hospital atmosphere. This for several reasons: in the first place, the care of the sick in the beds in the hospital is only a part of a hospital's obligation to the community. The training and teaching of doctors and nurses in their community is a very important part of its duty; its example in sanitation, in hygiene, in inculcating good habits of living, in the use of good foods—these are all important parts of the duty of a hospital toward its community; and, even if the hospital were not caring for and curing a single member of the community, the institution, by reason of its mere existence, would be more than worth while as a workshop in which the physicians of the community could acquire experience and improve their skill in their profession, so that they might be able the better to meet the emergencies of the community when such arose. It is beside the question that there is a good hospital twenty-five miles away; the transportation is bad and slow and uncertain; or, even if the transportation were good and prompt, the needs of the patient are urgent and he or she must have skilled operative attention immediately or die. How are the doctors in a community to acquire the necessary skill to take care of the health of the people unless they have access to a hospital? And it seems that if it cannot possibly be a good hospital, then even four walls, clean beds, and simple furniture, operating room, and ordinary kitchen and dining rooms, all pervaded by an atmosphere of skilled competence, is a very much better thing than no hospital at all. So it seems to us that every community of two or three thousand people is entitled to a hospital of some sort; a reconstructed private residence or even a made-over abandoned factory building would be better than no hospital at all.

### THE SURVEY OF THE COMMUNITY

All over this country—indeed, all over the world—there are good-hearted, philanthropically inclined people, medical and lay, who are awakening to the fact that their community ought to have a hospital. THE MODERN HOSPITAL has been and is inundated with inquiries from such people as to how they may proceed—first, to develop whether they really need a hospital, and, if so, what kind, and how to go about it.

It seems to us the first question to be settled is whether the community actually does need a hospital, and we have almost answered that question above. If there are two or three thousand people whose interests can be focused at a single point—that is, in a small town, and if there is not a hospital near by that will furnish a workshop for the local physicians and at the same time provide a place in which the sick of that community can be taken care of promptly and efficiently, then that community needs a hospital of its own.

A very superficial inquiry among the medical men of the community would develop the fact as to whether there is enough sickness in the community that would naturally and under favorable circumstances find its way into a hospital. The doctors could go over their visiting list for a year back and pick out from memory the ordinary cases that came under their own care that would have gone to a hospital if such an institution were in existence. Suppose there were 200 of such cases in the course of the year among all the doctors. Are not those enough to satisfy the people of the community that they need a hospital? And let us take, for instance, that figure 200 as the number of sick during the past twelve months who were in need of hospital care and who were compelled to remain at home. It is generally conceded that the average stay of patients in an acute disease hospital is fifteen days. If there were 200 people all told, that would mean that, if there had been a hospital in that locality, there would have been 3,000 days' treatment, or approximately ten patients per day in the hospital. But the hospital habit grows on members of a community and on members of the medical profession, and after a hospital had been in existence for a very short time the community would find, and the medical profession would find, that patients could get so much better care in the hospital than they could at their own homes that this average of ten patients per day would very rapidly grow to twice the number; and then, too, there are many people in a community who go about with infirmities of one sort or another—bad eyes that need attention, bad tonsils and teeth, diseased skins, chronic rheumatism, or one of a thousand other complaints from which, for want of facilities, they continue to suffer without any attempt to get well—so that, if there were a hospital, those cases would increase the number of patients very considerably. So by easy stages, and following out some of these lines of thought, a community can quite correctly estimate its hospital needs not only for the present, but pretty well into the future.

Then there comes the question of what sort of a hospital does the community need; naturally it must be a general hospital because all kinds of sickness must be cared for. The time has gone by when any hospital, metropolitan or other, can afford to reject certain classes of patients and accept others. People who find their way into a hospital are sick and their illness is not within their control, and a diagnosis is frequently difficult, if not impossible, so that a patient taken in for one disease might easily develop something else in the course of a short time, or perhaps a mistake was made and he did not have that particular disease, but something entirely different. It is unthinkable that a hospital of any sort can accept a patient and then send him home if it transpires that he was not just the sort of case they thought he was. The time is well at hand when it is a hospital's duty to be ready to take care of any kind of a disease that comes along and any kind of a patient; so it would seem that a general hospital would best fit any community's needs. But each community has a special problem of its own; for instance, it may be a mining district and a good many cases will be male surgical patients, and, if it is a coal mining community, a good many of these patients are going to have their backs broken and are to be long, tiresome, and chronic cases. In such an event the male surgical service would overtop everything else. Another community is made up of milling people, who are constantly getting eye troubles; in that event there would be a very large out-patient department, mostly made up of eye cases, and a great many patients actually in the hospital would be ambulatory patients and not confined to their beds. That would make a difference in the character of the hospital, and the interior arrangements would be somewhat different.

Then, the character of the medical staff would have something to do with the different services. If there was to be an obstetrician on the staff who had a large practice and who was a progressive and capable man, full of energy and activity, and who was growing in popularity, then the hospital would, to serve its own best interests, have to care for his patients and give him efficient service and good facilities, so that adequate care could be taken of maternity women, and that service in the hospital would grow amazingly if such arrangements were satisfactory. And so with any other member of the medical staff, and any other service in the hospital.

### THE SUPPORT OF THE HOSPITAL

It isn't every community that needs a hospital that can adequately support even the simplest kind of an institution. There are some communities so poor that the members cannot even afford a doctor when they are sick—even a doctor whom they do not intend to pay. But the average American community can afford to support a hospital, and the architecture and equipment and general scheme of operation of that hospital will be largely dependent on the ability of the people to pay for it. If it is a poor community, it will be a poor hospital—but better than none.

There are two forms in which money must be provided—one for the building and equipment of the institution and one for its permanent support. Let us think first of the building funds. In a small community that is trying to arrange for a single small hospital to meet the needs of all the people, there is only one scheme by which money can be raised, and that is to go out with a subscription list into the community and get men and women who have money to put down their names for a specific sum, which many times can be divided up into three or four payments, semi-annual or annual, and, if the names on the subscription lists are good, the local bank will advance the money on the deferred payments for a small rate of interest. If the names are not good enough for a bank to accept, then they are not good enough for the hospital itself to count on, and the list will have to be amended and strengthened before building operations can go on. This applies to the building operations and equipment fund, whether it is to be a new hospital or a made-over private residence, and whether the equipment is to be the simplest form or elaborate. A warning right here must be given that a community has no business to ask outside commercial people either to present the institution with a part of the bill for equipment or building material, or to wait for their money. That isn't business, and it is unfair and unbusinesslike from every conceivable standpoint. If the community, after careful analysis of its resources, thinks it cannot create some sort of a hospital with local funds, and it knows where outside funds can be procured specifically as donations toward a good cause, it has a right to go and get those funds; but the minute that a beginning is made to mix business and charity, financing and philanthropy, just that minute the whole enterprise heads toward disaster.

People can give a good deal more money if it is understood beforehand that they are not going to be asked to give it all at once, and, if the matter is put into such shape that individuals are not compelled to ask for the concession of payments in installments, and it is clearly understood that the installment plan has been definitely fixed as a business proposition, individuals will not hesitate

to participate in that sort of subscription, but that all ought to be clearly understood and specifically stated.

### FUNDS FOR PERMANENT SUPPORT

Every hospital should be organized and planned with a view to its becoming a self-supporting, hence a self-respecting institution; not that every hospital will be or is asked to be self-supporting, but the scheme of organization should be predicated on self-support, and the funds for support should be arranged for in adequate amounts before the enterprise gets under way, because there is always danger of miscalculating and of planning to do more, and in some cases contracting to do more, than the funds eventually arranged for will permit. The best possible way to achieve this end—that is, the end of self-support—is to plan certain pay accommodations in the hospital, and the amounts to be charged against each bed and for each service should be fixed and the total amount should be at least 25 percent more than the actual necessities figure up, for the reason that there are bound to be unoccupied beds, slack seasons of work, and some unprofitable adventures. Twenty-five percent ought to give a fairly clear margin in which the hospital may move itself.

Every bed in every small community hospital should have a price and should be charged for; this thing of doing indiscriminate charity work, with no specific funds with which to do it, is wrong and must lead to disaster; not that it is wrong to do charity work—indeed, charity work must be done and will be done—but it should be paid for by funds expressly provided for that purpose. In other words, let us say that we have organized our hospital, planning its fixed charges and with determination to keep within these charges, and then let us say we have it so arranged that 75 percent of the capacity of the house will be adequate to earn the necessary amounts; that would be an excellent plan of organization, and would be the way that a banker or businessman would go at the affairs of his own enterprise. Why cannot he treat the hospital of which he is a trustee, and which he helps to control as a sacred trust, in at least as safe a manner as he would his own business affairs? A superintendent operating such a hospital, so clearly and classically provided for, would always know what to do and could plan ahead. Then, if a fund comes along, given for the purpose of doing charity work, no inroads are made on the income of the institution and no financial legerdemain will be called for to finance the institution. There will be no deficits at the end of the year, and, most important of all, under such circumstances the good people of the community will become impressed by such methods and they will give more liberally to the institution because they will be quite satisfied that their funds are being properly employed.

### THE ORGANIZATION

We have now seen where our building fund, our equipment fund, and our fund for permanent support is to come from. Now let us see how it is to be expended and who is to conduct the affairs of the institution.

Long before we begin to talk about money needed, at the very birth of the thought toward the creation of the hospital, half a dozen or more of the safest, soundest business people of the community should be called together and the plan of him or her who conceived the scheme should be laid before this small group. If there are objections, this is the time to raise them. The whole scheme should be laid out and arranged in a general way. Then the number of organizers should be increased to perhaps fifteen or twenty, among whom there should be a number of the better women of the community, and the greatest care should be exercised in the selection of these women. The care of the sick is woman's business, and the affairs of the hospital are more acutely her concern than the men's, but women are not good financiers in hospital management and too many of them have the unhappy knack of wanting to go to the kitchen to shell peas for dinner, into the linen rooms to direct affairs there, and into every other crack and cranny of the hospital to dip into details, to the great discomfiture of the superintendent, who is paid to do that kind of work. So that in the early days of the hospital's career the greatest care should be taken to identify women with its active interests who are big enough and broad enough to know where their abilities can be properly exercised, and recognize the dividing line beyond which is the superintendent's exclusive prerogative and duty.

Having got these people together, the survey suggested at the beginning of this paper should be inaugurated and carried out. That would be best done by one accustomed to deal in figures and cold facts, and not one whose sympathies would be exposed to every changing current. In this survey all the possibilities should be developed—whether the community needed the hospital, what kind of an institution was needed, what size, where to be located, the raising of the funds, and the plan of organization. A written report should be made covering all of these phases of the survey, and at this point counsel should be had with an experienced hospital administrator, because at this point an infinitesimal mistake can set the

whole enterprise out on a road that will lead it far away from its proper goal.

This group of people can go ahead now on their subscription lists and appoint three committees: a building committee, whose duty it would be to begin the preparation of tentative plans for the building of the hospital, and that committee's work should be based on the survey report finally adopted, which should specifically state all details for that committee to work with, including the size and cost; a finance committee, whose duties it would be to direct and oversee the collection of funds and their proper expenditure; and an organization committee, whose duty it would be to create a completed organization, beginning with the board of trustees and ending with the downstairs help in the finally completed institution, fixing authorities and responsibilities and duties.

All these committees will be working independently of each other in a measure, but interdependent, also, in a measure; plans for the building, the finances, the scheme of organization, all can go forward happily together, and every so often general meetings of the group should be held and reports should be made to the whole meeting by the various committees, and these reports should be amended and adopted, and should serve as a permanent working basis; notes should be kept of the doings of these meetings by a capable secretary, and at each meeting the notes or minutes of the last meeting should be read and approved—all as a working record.

### THE CHARTER

We have seen now the inauguration of the work without any authority whatsoever in law, undertaken and carried out by a group of self-appointed people, and this status must be retained until the funds, at least a sufficient amount to assure the success of the project, are provided. The next step is work for a lawyer—the preparation of the papers for incorporation of the hospital, the securing of a charter from the state and the license from the county, or city, or town. This charter is an important paper, and a fairly workable form of such a document follows:

> The object of this corporation is: "To purchase, erect, own, and maintain hospitals and similar institutions for the care of the sick; to teach the science and practice of medicine and surgery, social hygiene, and the most modern methods of restoring and maintaining health and preventing disease; to purchase, erect, own, and maintain laboratories for the discovery of causes of disease and the treatment thereof, including all such research work as may be directed by its board of directors or governors; to compile, print, and publish books, pamphlets, and public lectures, including the results of such research work as may be undertaken; to receive, manage, invest, care for, and disburse any gifts, donations, or bequests made, appropriated, or set apart to said corporation to promote any or all of the above purposes or for any benevolent purpose designated by the donor or donors; and to do any and all things necessary or incidental to the carrying out and exercise of any or all of the objects aforesaid."

This charter will be asked for in the name of certain commissioners, and these commissioners must meet after the charter is granted and call for an election of trustees. Then comes up the question, who are to vote for these trustees, and the best way to provide for this is by way of the charter as above indicated—that is, an association must be formed, with annual dues, life memberships, and so on. This is a good way to raise money, because each individual who subscribes will have something to say about the institution's activities, and people who are sufficiently interested to give money for a hospital are sufficiently interested also to want to have something to say about its affairs. It can be provided that an annual fee of, say, $10 will entitle the holder to membership in the association, with one vote, and each $10 can call for an additional vote if so desired. This offer is some inducement to people to give large amounts, because, if they have only one vote, no matter how much or how little money they give, they are not likely to strain a point in the amount of their gifts.

### THE ELECTION OF DIRECTORS

The charter commissioners will call a meeting of these association members or stockholders, and an election will be held for directors, and this election is a very important matter. Too many directors are unwieldy, and in any event only a very few will be actively engaged in the institution's affairs, and yet, if there are too few directors, it will be more than likely that a cry will be raised in the community before long that the hospital is a trust, in the hands of two or three people; so that some middle ground should be chosen in this matter. A directory made up of twelve or fifteen members is a good, workable one. But these directors should not be chosen to terminate their service all at the same time. If that were done, policies of the institution that had been long prearranged and that were in course of successful carrying out could be changed overnight and the institution thrown on the rocks by a new group of men who had not been sufficiently long in the enterprise to have a proper perspective and the proper attitude toward, and the necessary experience in, its affairs. It is best to elect directors for different terms—say, two go out each year; but this arrangement should be so made that it would take four or five years for a sufficient number of new men to come in to change the policies of the association. Before that time was up the men would have become thoroughly accustomed

to their duties, and thoroughly educated and trained, and, if the prevailing policies of the institution were good, they would have come around to their support before there were enough changes to make a difference. Another warning at this point; it is hazardous to elect doctors as members of the board of trustees. Medical men are an integral part of a hospital—its affairs are their business; they are living their very lives there, and consequently their interests will be greater than those of any other factor in the community. Doctors are only human, and, while they give more to a hospital than anybody else, at the same time the hospital gives more to them also. And if these men are on the directory, it is just a little bit more than fair to expect that they will not use their positions sometimes in their own selfish interests. And whenever a doctor uses the hospital for his own interest, he is unfair to some other doctor, and that other doctor is going to find it out presently, and the situation will breed criticism, discontent, jealousies, and an unhappy state of affairs. Nine-tenths of the friction in the hospitals of this country today is due to the dominating influence in the institution of some member of the medical staff. If all the doctors are treated alike, and if they are kept to a staff of their own, which is the medical staff, and are not permitted under the scheme of organization to have a vote in the directory, and are not permitted to be present at the meetings of the directory, the institution will prosper to a far greater extent.

Necessarily some phases of the creation of this small hospital will overlap, and perhaps a few items suggested in this paper may have to be repeated in subsequent papers, but some of them are so important that repetition should strengthen and not weaken them.

(To be continued next month.)

## COMPULSORY STATE-WIDE HEALTH INSURANCE AND ITS RELATION TO THE MEDICAL SERVICE[1]

### Carefully Prepared Data on the Advisability of Providing National Health Insurance—Reasons for Adopting Health Insurance and Standards for the Measure—Epitome of the Plan

By EMERY R. HAYHURST, A. M., M. D., Director Division of Industrial Hygiene Ohio State Board of Health; Assistant Professor of Industrial Hygiene Ohio State University, Columbus

IN presenting the following material, I wish to state that none of the ideas submitted are original with me, but that the material has been culled from various sources, principally the work of experts in the subjects of economics and insurance.

As a premise and common ground on which to begin, let us assume that we are all interested in the subject of social insurance, and especially in that phase called health insurance, as a measure of economy, as a humanitarian movement, and as believers in the general principles of insurance against hazards wheresoever they may exist.

Before taking up the various propositions which appear to confront us in connection with the final establishment of health insurance in this state, it is proper to submit just what the proposed insurance comprehends. To save time, I will cite the following paragraphs from their original sources (which any may read for themselves), and arranged under three headings, as below:

REASONS FOR ADOPTING HEALTH INSURANCE

"Health Insurance—Standards and Tentative Draft of an Act," submitted for criticism and discussion by the Committee on Social Insurance by the American Association for Labor Legislation, 131 East Twenty-third street, New York city, November, 1915. (Read pages 1-2.)

"Memorandum on Health Insurance Legislation." Four-page leaflet published by the American Association for Labor Legislation. (Read the first paragraph.)

"Insurance—Its Relation to the Public Health." Public Health Bulletin No. 76, March, 1916, United States Public Health Service, by B. S. Warren and Edgar Sydenstricker. (Read pages 43-45, 53, 66-67.)

"Social Insurance and the Medical Profession," by I. M. Rubinow, *Journal of the American Medical Association*, January 30, 1915, pages 381-386. As concerns its value in the matter of compensation for industrial diseases, Mr. Leonard W. Hatch, chief statistician of the New York State Industrial Commission, states that "in factories alone the death rate due to industrial diseases is unusually high. The amount of compensation paid to the dependents of workers in cases where death resulted from industrial diseases was 3.74 percent of the amount paid where death resulted from accident, while the amount paid to workers disabled by industrial diseases was only .13 percent of the amount paid to workers disabled by accidents (British experience). . . . There is reason to believe that, should the Legislature of New York state include industrial diseases under the compensation law, the total increase in the amount of compensation paid for injuries and deaths caused by industrial diseases would be about 1 percent of the total now paid for injuries and deaths caused by accidents." Hence we find that industrial diseases pure and simple are not apparently a very great factor in this demand for health insurance. How much diseases *partly*

[1]Read before the Ohio Hospital Association Convention, Cincinnati, May 24, 1916.

*industrial* may be important in the demand, it is wellnigh impossible to estimate. However, I look on compensation for industrial diseases themselves, and apart from compensation for all disability, as entirely impracticable because of the many disputes which arise as to the importance of contributory factors outside of the industry in the development of the diseased conditions.

STANDARDS FOR HEALTH INSURANCE

"Health Insurance Standards and Tentative Draft of an Act," pamphlet by the American Association for Labor Legislation. (See above.) (Read pages 3-4, 22.)

"Health Insurance—Its Relation to Public Health," Public Health Bulletin No. 76. (See above.) (Pages 52, 67.)

THE SCHEME OR PLAN

"Health Insurance," by *American Labor Legislation Review*, Vol. VI, No. 1, March, 1916. (See especially article by Henry R. Seager, pages 21-25.)

"The Gist of the Health Insurance Bill." Leaflet, American Association for Labor Legislation. (One page.)

"Memorandum on Health Insurance Legislation." Four-page leaflet. (See above.) (Pages 1-3.)

"Health Insurance—Its Relation to Public Health." Public Health Bulletin No. 76. (See above.) (Pages 54-57.)

"Health Insurance Standards and Tentative Draft of an Act," American Association for Labor Legislation. (See above.) (Page 26, sec. 52.)

Some features in the scheme or plan stand out. The expense of the same, as conceived in the Mills bill presented before the Legislature of New York state, comprehends 3 percent of the payroll. If the employer pays two-fifths of this, he suffers an increase of 1.2 percent of his payroll in order to meet his part of the premiums. If, as in the case of manufacturing a pair of shoes, the payroll represents one-fifth of the total cost, whereas materials, equipment, and overhead represent the other four-fifths, the employers will have to add to the cost of his product one-fifth of 1.2 percent, or .24 percent. In figures, this would amount to an addition of 1.2 cents to be added to the manufacturer's price on a $5 pair of shoes—i. e., the cost of the shoes thereafter would be $5.012. This is certainly an astonishingly small amount which the employer will have to add to the cost of products in order to raise his own part of the premiums for all the benefits to the workers comprehended; visibly, sickness bills for self and dependent members of his family, the cash benefit for not over twenty-six weeks amounting to two-thirds of the average wage, maternity benefit, and death benefit of $50. One enterprising laundry company in New York city has already undertaken to exact the cost of its contributions to the now existing workmen's compensation insurance by adding, for example, 2 cents to a laundry bill which totaled $1.93, making the total bill to the customer $1.95. Obviously, certain regulations of this practice must be adopted to prevent combination in industry from saddling on consumers fraudulent taxes alleged to be due to the cost of health and accident insurance premiums.

The benefits to 95 percent of the working people and their dependents, which practically means 95 percent of the total population in any community, are so obvious that the slight tax of 1.2 percent to secure all of these benefits cannot be complained of as a hardship by them. In instances where workers receive less than $9 per week, arrangement is made for a proportionately greater share of the contributions by the employer.

Contributions to the state fund by the taxpayers in general may be seriously objected to by the farming community, which is now exempted from workmen's compensation insurance. Every endeavor should be made to bring the economic features of the plan to the notice of the employing and hiring farmers, not only to include them in the insurance scheme, but to overcome their present general opposition to all increases in taxes which are necessary to meet clamoring needs.

*The medical service is interested in at least forty propositions, as follows:*

1. Compensation always creates a large additional demand for the services of the physician, surgeon, dentist, hospital, dispensary, pharmacist, nurse, and social worker.

2. As accidents or sickness now mean loss of wages, most wage-earners are forced to accept gratuitous treatment very soon and to crowd free hospitals and dispensaries, while family physicians and others witness uncollectible bills. Most medical charity, voluntary and involuntary, will be eliminated.

3. The actual amount of total remuneration (based on accident compensation and foreign experiences) will very materially improve.

4. Bills collectible from casualty companies will greatly decrease in number or disappear. Bills collectible from more or less willing and prosperous employers will also practically cease.

5. No service need expect to "make a good thing" out of the new conditions which will supervene. Each may expect to make an honest, sound living.

6. The community will come to place a higher valuation on services of healers and educators—perhaps somewhat in keeping with those placed on the services of prize fighters and baseball players. There will be a great awakening of the individual to his voting responsibility and his direct interest in public affairs.

7. There will be no more medical bills of large size for minor services, because standards of payment derived from service among prosperous families, with its accompanying waste in waiting for business, cannot be applied to the treatment of the great class of wage-earners.

8. The medical service will need to guard against the "physician on the fringe," who may have a tendency to aid in the development of malingering.

9. There will, no doubt, be a change in medical ethics in regard to the sense of professional duty toward the patient as related to the duty to the social organism as a whole.

10. The medical service will have to study against the danger of encouraging the excessively neurotic diathesis.

11. In addition to the surgical and medical judgment, a new economic judgment will be required, especially in regard to the time each case will consume before the entire restitution of earning capacity returns. In other words, a much deeper study will have to be made of prognosis.

12. The physician's judgment is too optimistic more frequently than otherwise.

13. The acceleration of economy will acquire a definite commercial value.

14. An indirect result will be the stimulus given to physicians and all the treating agencies in the work of prevention.

15. Rubinow estimates that, based on foreign principles, the national system of sickness insurance alone in this country would represent an annual amount of about $300,000,000. Of this amount, one-half will be spent for medical aid and treatment, the other half going to cash benefits.

16. The futility of drugging and treating a sick man when other conditions are unfavorable to his recovery will arm the physician or treating agency with a potent weapon in the demand for necessary improvements in home, workplace, and habit hazards.

17. All treating agencies will have the right of organized effort to improve conditions of employment, conditions of home life, and advancement of the knowledge of personal hygiene.

18. All treating agencies will have a guaranteed source of income as against the speculative character of private charity.

19. The physician's relation and those of treating agencies to lodge practice, and especially to the standards of remuneration, will be greatly changed. Physicians will note many inroads into the field of private practice which their organizations must regulate rather than oppose, since most of them will be to the general economic advantage of all parties concerned.

20. Insurance actuaries state that medical service is hopelessly behind the times. In its worst phase, private medical practice is, medically, from twenty-five to sixty years behind the present status of medical science and surgical skill. In its best phase, it is a luxury, which, like automobiles or private yachts, can be purchased only by the selected few. The socialization of medical service must come. The purpose it must accomplish is twofold—improvement in quality and cheapening in cost.

21. It is not likely that the right of selecting the medical service on the part of the sickened individual will obtain to a complete degree, as this is based on the theory that the patient is a better judge of a service's ability than are those who are in a proper position to know.

22. Shall the remuneration of the physician be in the form of a regular salary, as is done in some German cities and in the medical service of Russia, or shall compensation be in proportion to the number of visits made, as in Leipzig, or in proportion to the number of permanent clients whom a physician may succeed in attracting, as in England, or shall he be remunerated in inverse proportion to the amount of sickness, as the Chinese are supposed to do?

23. The financial relations of a large existing organization may be seen in the twentieth annual report of the German sick funds (year 1913), just issued. An abstracted table gives the following information (see United States Labor Review, Vol. II, No. 4, April, 1916, p. 98):

Medical care is provided from the first day of sickness. Financial aid is given beginning with the fourth day of sickness. Compensation continues for twenty-six weeks at the longest.

| Notations | Total | Average per member per year |
|---|---|---|
| Number of funds of associations.. | 21,342 | ..... |
| Membership ..... | 13,566,473 | ..... |
| Average membership per fund.... | 635.67 | ..... |
| Cases of sickness..... | 5,710,251 | ..... |
| Days of sickness..... | ..... | 8.66 |
| Total contributions ..... | $104,909,309.00 | $7.73 |
| Total disbursements ..... | 103,000,075.00 | 7.59 |
| Total cost of sickness..... | 92,983,399.00 | 6.85 |
| Medical treatment ..... | 22,358,051.00 | 1.65 |
| Medicines and other curatives.... | 14,355,602.00 | 1.06 |
| Sick benefits ..... | 38,446,843.00 | 2.83 |
| Maternity benefits ..... | 1,803,748.00 | .13 |
| Funeral benefits ..... | 1,911,602.00 | .14 |
| Hospital treatment ..... | 14,260,202.00 | 1.03 |
| Care of convalescents..... | 81,352.00 | .007 |
| Cost of administration..... | 6,157,354.00 | .45 |
| Excess of assets over liabilities... | 73,986,569.00 | 5.45 |

24. What arrangements will the physician make as to remuneration when he knows that his visits are altogether ineffectual except for the moral effect, for under the system a social conscience must be uppermost?

25. There is a possibility of developing a new national pride in the efficiency of medical services, which can be brought about, however, only with the physician as an enthusiastic ally.

26. The proposed bill, as it now stands, gives practically no details as to the relation of the physician to the insurance scheme. Section 9 simply states, "medical, nursing, and surgical attendance, and treatment, and all necessary medicine, shall be furnished from the first day of sickness, but not to exceed twenty-six weeks, etc." The only other section touching on the medical service is No. 37, "Health Insurance Union"—"two or more health insurance carriers within a district may combine for the administration of the medical benefit, subject to the commission." Regulations for dissolving such unions when they prove unfeasible are also laid down.

27. Should not a physician elected by the legalized medical fraternity of the state be one of the five commissioners appointed by the governor, with the advice and consent of the Senate?

28. An intensive organization of medical service will be called for, as only in this way can a man be given the service which he needs at a reasonable rate. Dr. Rubinow, the statistician, gives the following illustration: "I remember in Wisconsin the great objection to the requirement of examination before marriage was that the fee was limited to $3, and that a Wassermann test was required, while the physicians declared that such a test alone costs $10—couldn't be done for less. I happen to have a friend who is quite expert in making Wassermann tests, and he states that he is able to, and often does, make fifty to sixty tests in one day. But he is working for a medical institution, and I doubt if he receives $10 a day for all the examinations. The fact is that the actual cost of making a Wassermann test is not very much higher than making an ordinary test, but it costs $10 under the present disorganized conditions of the medical field. As a result, some insurance companies in New York are beginning to see the light and organize their own medical service, by which they are able to provide more medical aid than the law calls for. But the social and economic solution is some system by which all necessary medical care can be given to injured employees at a cost not greater than required at present for their limited aid."

29. The United States P. H. Service points out that, without an efficient medical staff closely related to the

federal or state health agencies, any system of health insurance will fail of its best results. It will not be a health measure, but merely a relief measure—a serious mistake, as shown by the experience of the European systems. There must be a better correlation between the health insurance system and the medical profession than has existed in the German and British systems. Otherwise, "doctors' strikes" will follow. Also, on account of the extent of malingering on the part of patients, there should be appointed medical referees to investigate and sign all certificates of doubtful character. Precedents have shown that this system has proved successful wherever tried. It is not necessary to point out the possibilities of disease prevention which may be expected from the visits into the home of their sick beneficiary of a skilled sanitarian in addition to the attention of the family physician.

30. The United States P. H. Service proposes the freedom of the choice of physicians on the part of the injured persons on a capitation basis, regardless of whether their patients are sick or well. Thus every incentive will be offered to physicians to keep their patients well, to render the most efficient service, and to prevent malingering.

31. It is also pointed out that the responsibility of signing disability certificates can be removed from the family physician and placed in the hands of a disinterested medical officer of the Government. Furthermore, the fact that the weekly cash benefits are materially less than the weekly wage is another factor which would tend to prevent malingering.

32. There will also be a decided inducement for physicians to locate in areas where the poverty of the people has previously made medical practice impossible except on a charity basis.

33. The claim that the medical profession has not been consulted enough is not true, since the committee which drafted the proposed bill has worked directly in connection with a special committee of the American Medical Association composed of Dr. Henry B. Favill, of Chicago; Dr. Lambert, of New York; and Dr. Cotton, Boston, which committee has been making reports for nearly a year, although recently disrupted because of the death of Dr. Favill. Especially has the committee been requesting opinions from physicians throughout the country, so that, as the bill appears in any state, the medical body thereof may be in a position to have inserted the proper sections or amendment to sections which are desired, including the minimum compensation of the physician, the maximum number of persons to be placed under the contract practitioner's care, the appointment of physicians under civil service examinations, and the limitation to physicians qualified to practice under the medical practice laws of the state. Dr. I. M. Rubinow, 131 East Twenty-third street, New York city, is now secretary of the committee.

34. There will be a general doing away with sanitary inspectors, who, at most, are "easers off" between the intermittent demands of society and the opposition of the temporarily embarrassed individual. Their places will be taken by the little weekly insurance premiums, which will rise or fall, according to the perfection of hygiene present. The skilled sanitarian and hygienist will appear in every community.

35. It is expected that each component society or local will develop its own standards, publish its own manuals of safety—perhaps even provide for its own educational advancements.

36. Regulation medical service will supplant quacks, practicing pharmacists, patent medicines, and home treatment.

37. There will be a great increase in the use of medicines and medical appliances.

38. The people will cease to dread hospitals, and there will be much less treating of the severely sick in homes.

39. There will be a great increase in private associations meant to supplement the efforts of the insurance authorities and the physicians.

40. The supervising commission having a medical representative should be empowered to supervise all funds and determine their character and limits of jurisdiction, promulgate all regulations necessary to enforce the act; maintain staffs of medical examiners, specialists, dentists, and visiting nurses; provide for medicines and appliances; make contracts with local physicians; cooperate with local funds and health authorities in disease prevention; and provide for collecting actuarial data.

### GENERAL COMMENTS

The public is the best served when the incentive to exact diagnosis and careful treatment exists; when the personal relationship of the family physician to the patient is maintained; when contract practice, except on some salary basis entirely, is impossible; when contracts with the physician allow, at the most, a per capita payment for the total number of persons under his care, and this number is limited; when the physician cannot be the monitor between the patient and idleness; when the detection of malingering will be an incentive to all who have aught to do with the treatment; when the doctor's time is not usurped by an excessive number of patients; when the physician's income is not definitely fixed or his opportunity limited; when the incentive to personal achievement in medicine is present; and finally, when the medical art is not allowed to deteriorate and services become routine and second class, but when all is intensified and waste is eliminated through better medical organization.

### SUMMARY OF CERTAIN FEATURES

This is insurance—not endowment. No large sums will be accumulated for spoilsmen to go through with. One-sixth of the total accumulations of the past three years will be the maximum sum which any local association may accumulate. The amounts levied therefor will be in close relation to the immediate demands for the care of sickness.

The local aspect of the administration of funds in each community by each locally interested society assures the success of the whole scheme. It is direct government of the assessed in the control of the funds spent. Readers should especially see the article by Wm. Hard, entitled, "Who Keeps the Watch on the Rhine?" in the March, 1916, issue of the *Metropolitan Magazine.*

A great intensiveness in medical organization is to be expected, whereby all the treatment which

is needed in a given case is supplied, and whereby all persons needing treatment will receive the same.

Because of the bona-fide character of the service to be rendered, great opposition is to be expected from all nostrum makers, quacks, and others selfishly interested in the exploitation of sickness. The elimination of selfishness guarantees the ultimate perfection of the benefits to be derived from state health insurance.

## BOILER AND ENGINE ROOM ECONOMIES

### Cost of Steam, Electric Power and Light, and Hot Water Is to Be Had With Present-Day Measuring Apparatus—Institutions Should Treat Power Plant Expenses Like Other Departments

By OTTO E. GOLDSCHMIDT, Consulting Engineer, New York

TO many of those who are in direct charge of our modern hospitals, and I refer particularly to those in authority who have to approve the bills for coal, water, electricity, oil, waste, and other supplies which go to the making of heat, light, and power, it is a great mystery as to what actually happens to all the materials for which so much good money is spent. Usually the chief engineer is asked to check these bills, but he is generally the court of last resort, and beyond him lies the darkness into which the eye of the average manager cannot see.

In former years, before the mechanical equipment was brought to its present state of perfection, many directors were content and happy if their supply of heat, light, and power was at hand whenever it was wanted, and did not consider its cost if only satisfactory service was the result. They did not consider whether they were getting the most and the best at a minimum cost of production.

The bookkeeping system today in many of our hospitals where large sums are spent for the mechanical plant in the way of coal, supplies, labor, etc., is very weak and poorly developed, and the different departments are not charged for their proportions of the actual service, nor is the cost of production for regular periods determined, as is the case with most of our large industrial institutions, where each department must pay for its service as though it were a separate organization, and the cost of production is under constant attention and care.

I find in many cases, when the mechanical plant in a new institution is started, that, no matter how well it may be planned or installed, and how economical it may be in operation, the bookkeeping end is left, on the one side, to the operating engineer, who may be well up in the knowledge of maintaining and operating his plant, but knows absolutely nothing about bookkeeping, and, on the other side, to the bookkeeper who knows all about the regular methods and systems of bookkeeping, but knows nothing as to the distribution of the various charges as applied to the mechanical and electrical plant.

These features are brought out only too frequently when it comes to a consideration of purchasing current from the central station companies in place of its generation on the premises. As a general proposition, it is impossible to determine from the records which are kept as to what it costs to generate a kilowatt hour of current, and it is necessary to make special tests to approximate these facts. Unfortunately, in many cases the central station manager, keen to get new business for his company, will misrepresent to the owner, whether intentionally or otherwise, the true state of affairs, and will be enabled to shut down an isolated plant which is really making money for the owner. Again there are cases where an isolated plant in a small hospital could be shut down at a profit if the real costs were known to those in charge.

In many cases supplies for the mechanical plant are not divided into the general classes of maintenance, extensions, and production. Frequently have I seen all labor and supplies which went to the engine room, whether used on the elevators, other motors, or on the electric generators, all charged to the cost of producing current. Usually, in going into a plant where current has been made for years, on requesting information as to the cost of generating current, one is referred to the chief engineer. On inquiry from him you are given a rather indefinite reply or a certain fixed figure, but on further inquiry, however, it is seldom that you find that his figures are based on actual records kept for any period of time. In such plants it is at once apparent that the owners or managers have absolutely no conception of what is going on in their plant—whether good or bad.

With the present development of meters of all kinds, such as watt meters, steam meters, water meters, recording meters for hot water, and the

standard scales for weighing coal, which have long been with us, there is no reason why in a plant of reasonable size complete records of the cost of producing power, light, and heat cannot be accurately kept and proper distribution made of these items. Frequent tests as to the quality of the coal and oil should be made, and supplies carefully checked as to quality and quantity.

Daily records on printed forms of coal, ash, water, and electric current, oil, waste, and supplies should be kept, and proper distribution made between the various departments or uses. The labor account should also be properly distributed between maintenance, production, and extensions. The daily records may be summarized in weekly or monthly reports. These can be graphically shown in curves, and the relative consumption and production can then be analyzed and compared with previous periods. In this manner the responsibility for varying costs of production can readily be taken up with those at fault, and the managers or directors, even with limited technical knowledge, can maintain proper control over a department which has been drifting for years.

## MEDICAL PROGRESS IN THE NAVY

### Surgeon-General Braisted Lauds Secretary Daniels for Wisdom in Medical Matters

In his address before the graduating class of the Naval Medical School on April 12, 1916, the surgeon-general of the navy, Rear Admiral William C. Braisted, reviewed the work of the present administration of the Navy Department in so far as it affected the medical corps of the navy. The surgeon-general said:

"During the past two years the present secretary of the navy, in many instances on his own suggestion and in others by his support of the Bureau of Medicine and Surgery, has advanced our service in the following items:

"1. He has recommended to Congress the increase of the medical corps from 347 to nearly 500, the first increase in twenty years and most urgently needed.

"2. He has provided in his personnel bill a substantial increase in the upper grades of the medical corps. No increase in these grades has been made since 1870, notwithstanding the tremendous growth of the service as a whole.

"3. He has established two of the finest hospital corps training schools in the world for the training of male nurses, and made provision for the increase in this corps by nearly 11,000 men, an increase urgently demanded by the increase of the navy, and has also provided a possible chance for members of this corps to reach commissioned rank, thereby raising the efficiency and esprit of nearly 2,000 enlisted men in the hospital corps of the navy.

"4. He has made provision for a new hospital ship for the navy, which will enable us to build the first ship of this kind, designed especially for this purpose, and which will be a model for our country and the world. This one effort will, if granted by Congress, be of inestimable value to the navy and to all other countries. It will provide our fleet and our service with a floating hospital for the care of the sick and injured of the navy that will rival any metropolitan hospital in existence.

"5. He has established schools for the training of the native women of Samoa and Guam in nursing that already are giving most excellent results and are a most important humanitarian educational effort for these helpless people, promising, when completed, to be one of the noblest efforts made for the uplifting of any similar class of people.

"6. He has increased our appropriations to meet our necessities and to enable us to carry on our great work that extends not alone to the navy proper, but to thousands of human beings attached to the service in various ways and extending to all parts of the world.

"7. He has permitted us to take an active part in the regeneration of Haiti by furnishing medical officers and nurses to care for the sanitary needs of the great work that is now in progress in Haiti and which ranks with one of our greatest humanitarian efforts.

"8. He has supplied already, and gradually will furnish, our deficiencies in the many large hospital and medical organizations on shore, such as contagious units at Mare Island, Puget Sound, New York, and Newport, and has furnished adequate and commodious homes for our nurses at Mare Island and Boston, thus adding to the content and efficiency of the women nurses. South of Norfolk and San Francisco our coast line is practically unprovided with hospitals for peace and war, but, with a policy defining permanent naval stations, his attention has already been turned to the needs of the medical department. That we may not be unprovided in this respect in emergency, he has authorized our efforts with the Red Cross, and we are now beginning the organization of five Red Cross hospital units (mobile hospitals of 250 beds each, with personnel and equipment complete) that can be called at notice to any point of this coast line where needed.

"9. He has authorized a medical reserve corps, of the best medical talent that our country can furnish, to be ready to come to our assistance in time of need, and, to prepare this group of the naval medical corps, is initiating a correspondence school that shall give these officers a training and working knowledge of their work when called on. Realizing the great lesson to be learned from the present European war, he has detailed a number of our best officers for duty in Europe as observers, and the excellent results already show in the report of Surgeon Fauntleroy, whose work has added greatly to the professional knowledge of all who are interested in medico-military matters and is a credit to our service.

"10. The above are only a few examples showing the interest and activity of our secretary in this branch of the service. Did time permit, I should like to continue in detail to show you his interest and help as shown in innumerable questions of sanitation and organization, which makes the work of the medical department of the navy one of the most important branches of the service. Our work is most highly specialized, dealing as it does with so many questions, not alone with the healing of diseases, but with all that pertains to the orderly and successful running of this great department of the Government. The work of the Bureau of Medicine and Surgery touches intimately that of every other bureau in the department and makes us one of the busiest and most active corps.

"I have frequently asked myself, how is it that the head of the navy is so sanely interested in our work, and seems to comprehend our needs often before they are presented to him, and I think the solution lies in the fact of his education along medical lines. This comes, I feel sure, from the association with medical men of great worth and ability. Where has he had this association which has taught him the importance of medical work in the welfare of the nation? From all I can learn, it has come from the intimate friendship and association of his family medical advisers."

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The Public Health Committee of the New York Academy of Medicine has again taken up the matter of the construction of a contagious disease hospital in the Bronx. In 1911 and 1912 the Public Health Committee presented the need of such a hospital to the Board of Estimate and Apportionment, but, due to the protests made by certain real estate interests, the original site was abandoned. In 1914 $125,000 of corporate stock was issued for the construction of the hospital. This was, however, not sufficient money to accommodate the needs, and it was decided to defer construction until more money could be secured. The committee voted to urge on the Board of Estimate the issue of additional corporate stock to make possible the construction of a hospital of at least 300 beds, which is in accordance with the results of the investigation made on the basis of the incidence of scarlet fever, diphtheria, and measles, and the estimated number of cases needing hospital isolation.

The MODERN HOSPITAL

Editorial Office . . . 6 North Michigan Ave., Chicago
Business Office . . . Metropolitan Building, St. Louis

EDITORS.

Henry M. Hurd . . . . . Fidelity Building, Baltimore
Frederic A. Washburn . Mass. General Hospital, Boston
Winford H. Smith . . Johns Hopkins Hospital, Baltimore
S. S. Goldwater . . . . Mt. Sinai Hospital, New York
W. L. Babcock . . . . . Grace Hospital, Detroit
John A. Hornsby . . 6 North Michigan Ave., Chicago

SUBSCRIPTION.

Under domestic postage, $3.00; foreign postage, $3.50 (14 Shillings). Single copies 35 cents.

Domestic rates include United States, Cuba, Mexico, Porto Rico, Canal Zone, Hawaii and Philippines.

Contributors, subscribers, and readers will find important information on advertising page 34.

## The War's Lessons

With this number of THE MODERN HOSPITAL we finish the stories of medicine and surgery in the hospitals of the European war in the form of an epitome of Surgeon Fauntleroy's report to the Navy Department. In all three of these stories we have had lessons in simplification, in discipline, in order, in thoroughness, and in "end results."

There is no doubt whatever that Dr. Fauntleroy's report is being studied carefully and conscientiously by the medical profession in this country, and that its lessons are being taken to heart. What about the hospital people—what are we doing as our part of the harvest of these great war lessons? Have they meant anything to us—are Surgeon General Braisted's enterprise and energy and thoughtfulness in sending Dr. Fauntleroy to the battlefields to secure this immense fund of information to go for naught, or are they to bear fruit in the added efficiency, better character, more convenient service in our institutions?

For some years we have been thinking and talking about hospital efficiency. The time has now come when we are to be put to practical test as to whether we really are in favor of efficiency and whether we are to participate in the creation of higher efficiency.

Until recently hospital administrators were not very well trained—they just grew, like Topsy; but that is no longer true, and we may just as well make up our minds now that those of us who are not willing to march in the parade of progress must get out of the hospital field as unfit, because the positions are going to be given to those who are fit, and we had all of us better stop whining and stop our complaints about our petty troubles and look upward and forward, and begin to do something to show that we are really efficient, trained hospital people, worthy of the confidence of hospital boards. As a first step, let us interpret Dr. Fauntleroy's report into action in our own institutions.

## The Hospital Trustee

The hospital trustee is coming up this year in the discussions in more than one association meeting, and he is going to be belabored pretty thoroughly, and, unless the signs of the times are misleading, he is going to be a different man and she a different woman before he or she is to have any more peace.

About the only factor in hospital service that has not changed for the better in the past five years is the trustee—he is practically the same as he was. Some of him are indifferent and ignorant of their institution's activities, as they have always been; some of him are dominating and domineering, energetic without intelligence or special knowledge of the business they are supposed to be conducting; some of him—more especially some of her—have taken on a new physiognomy, with a long, sharp-pointed nose as the chief feature, due to the aggravated practice of invading the places that do not concern them in the hospital; some of him, again, are using the hospital for their financial interests—plainly, they are grafting, grafting in the sale of commodities to the hospital by institutions in which they are personally and financially interested; even some of them take commissions on goods which they permit to be purchased for the hospital.

Fortunately, the various above types of hospital trustee are in the great minority, and the future must eliminate them altogether. The vast majority of hospital trustees have a right conscience about their duties of trusteeship, they mean the very best good to the institution, and it is only training that they lack, and it is the duty of hospital administrators to insist on their trustees knowing what they are talking about when they attempt to argue on a hospital topic. In other words, if a hospital trustee objects to the superintendent buying a certain brand of food, or a certain quality of coal, or a certain fabric of blanket, it is the business of the hospital superintendent to be so intimately informed about the virtues of

these various commodities that he or she can "smoke out" the trustee and compel him either to defend his attitude or keep his hands off. It must be remembered that hospital trustees do not own the institutions; they are only trustees for others and are answerable to the community for their actions. They are public officials in a sense, and their acts are proper topics for public discussion, public approval or public opprobrium.

Let us have more light on the hospital trustee; let us enshrine the wise, beneficent, well-informed, just, efficient hospital trustee, and let us dethrone the other kind and get them out of our institutions.

### The Movies as a Health Problem

Every day we see or hear some reference to the educational value of motion pictures, and great numbers of writers, artists, philanthropists, and reformers are concerning themselves with one phase or another of that problem.

We hear learned discussions pro and con of the relative value of this or that kind of picture, and the censors almost tear each other's hair over the question of the suppression of a "scene" of one kind or another.

Perhaps it might easily be said that a discussion of the ethics and the sociology of the motion picture is foreign to the purposes and functions of a hospital journal, or a publication devoted to the public health, but suppose there was a real vital health problem coupled with a most important social question—it seems to us that in such an event THE MODERN HOSPITAL, being deeply concerned about whatever has to do with the health of the people—moral, mental, or physical—would be entirely justified in approaching the problem from its own viewpoint.

And we do see a health problem in the present "movie" craze. We see our children and our young people, and also our elders, running to the movies night after night; we see them less content to spend the evening at home; we see them less frequently reading one of the classics, or even the better current works of fiction, to say nothing of serious literature.

We are seeing less of settled home life and its interests, less of that introspection and meditation so necessary if we are to approach each day's tasks with proper forecast and prearrangement.

We are seeing our young people more and more dependent on extraneous influences and outside excitement for entertainment, less self-contained, and less capable of the enjoyment of life for what is stored within themselves.

We believe that the "movie" craze is doing more to destroy the home life of the American people than all other influences combined; and we believe that it is as harmful an influence, and in the same way, as cocaine or morphine or whisky.

We believe the educational value of the movie is infinitesimal in comparison with its power for harm.

JOHN A. HORNSBY.

### Live Hospital Topics of Today

We are publishing this month in THE MODERN HOSPITAL programs of three hospital associations —that of the American Hospital Association, which meets in Philadelphia September 26-29; that of the Catholic Hospital Association, which meets in Milwaukee June 7-9; and that of the Kansas Hospital Association, which met in Topeka May 2. Last month we published the program of the Ohio Hospital Association, which met in Cincinnati May 24-26. These programs are worth studying as an evidence that hospital thought is rapidly crystallizing into some definite standards and some well-mapped-out programs.

As the older and larger association, we would naturally think about the American Hospital Association and its program first. Dr. Smith has touched the quick, in the creation of his program, at several points and has given us some mighty good working topics to discuss.

1. The nursing problem we have always with us, and it is no fault of Dr. Smith's that it is again up for discussion at the very first session after the organization in the Philadelphia meeting. But nothing will be done about it—indeed, it seems almost unnecessary that anything should be done about it; as predicted in THE MODERN HOSPITAL some two years ago, while we have been arguing academically about nursing problems, these problems have been settling themselves along ways of least resistance, and they are now, fortunately, no longer in the debatable realm.

2. What could be more insistent today than outpatient and dispensary work, especially just now when we are realizing almost for the first time that the care of patients inside the hospital is only one, if not indeed a very small, part of the duty of the modern hospital, and that the welfare of the community outside the walls of the institution is the big obligation that must be met.

3. Hospital construction was never more unstable than just now. It is true that we still think in terms of fireproofing, of durability and architectural form, but we are realizing that there are still more important things to think about concerning the architecture of the modern hospital—viz., economical arrangement inside, so that better work can be done at less expense than in the past.

4. Then, at the afternoon session of Wednesday the topic of disinfection and the prevention of the spread of infections in hospitals is on the tapis. We are now almost unanimously agreed that so-called fumigation is not a solution of this problem, but that cleanliness, soap and hot water, backed up by conscience, are needed if we are to prevent the spread of infections.

5. The paper by Dr. Drew, on Thursday morning, on "Team Work and Stumbling Blocks," ought to bring out some new points, and certainly new points are needed, because "team work" is not only the most vital factor in present-day hospital efficiency, but it is in a kaleidoscopic stage, especially medical staff team work, and, after all, hospital administrators are vitally concerned about the solution of medical staff problems.

6. It is understood that in the Round Table session for large hospitals on Thursday evening one of the topics up for discussion is "The Hospital Trustee and His Relations to Other Factors in the Institution." We have some excellent trustees, and we have some even more excellent standards by which trustees may be measured, but there is also very much to be desired in the general status of trusteeship. Let us hope that in this round table discussion there will be many trustees present and that the topic will be handled without gloves—because it needs to be.

The keynote of the meeting of the Catholic Hospital Association is to be *Team Work*, and every form of team work, and every factor which enters into team work, is to be given a hearing. Dr. Charles H. Mayo is to lead off with "The Nature, Necessity, and Value of Team Work," and then others are to take up the physician's part, the trustee's part, the intern's part, the nurse's part, the patient's part, and the public's part of team work. Team work is more necessary in a hospital than any other one thing if success is to be achieved, and, if we could just encompass team work between all the factors named above, what a Utopia we should have in the present-day hospital! Let us come as near to it as we possibly can, and, in order to do so, the discussion at Milwaukee ought to be most illuminating.

Kansas has always been and notoriously is a trouble-maker. It used to be grasshoppers and bloody bridles, and chronic hemorrhage in "Bleeding Kansas." Now Kansas has more automobiles per capita than any other state in the union; she has more savings money in her banks per capita; she has more temperance, but otherwise she is not so dry as she used to be in the old drought days. Her state hospital association is starting trouble in another direction—viz., in the purchase of supplies. There is just a hint of this in Dr. Axtell's account of the Topeka meeting, where he speaks of the purchasing committee and the getting of bids on certain hospital supplies; this means, of course, that the association has gone into the community buying business. If carried along the right direction, community buying is one of the best things imaginable for hospitals, because the organization can specify some standards and guarantee that those standards are met, and the last word will not be said when the lowest price is indicated, but quality will stand for much if this purchasing bureau does its business properly, with price as an after-consideration.

This is to be a great year for hospitals. There are perhaps more than a thousand institutions now building; more money is being expended in hospitals than ever before, and without question we are launching on a new era of hospitalization, and we are definitely starting out on a journey the end of which will be that every sick man, woman, and child will have an opportunity to get the care of an efficiently conducted hospital.

## GETTING DOWN TO DEFINITE ACCOMPLISHMENT

### New York Social Hygiene Association Laying Out Year's Work, Including Hospital Activities

The Society of Sanitary and Moral Prophylaxis has been for some time limiting its work more and more to the local field, and the past year has been largely given to a study of the opportunities for social hygiene work in New York city, leaving the national field to the American Social Hygiene Association.

At the annual meeting on April 13 there was outlined a greatly extended plan of work to be undertaken immediately. The work will be carried on under two departments, interdependent—one for the study and suppression of venereal disease, under the direction of Mr. Frank J. Osborne, who for the past two years has been health officer in Orange, N. J., and one for the development of sex education, which shall tend toward a better understanding of the normal sex life, under the direction of Mrs. Frederick H. Whitin, who has been executive secretary of this society for some years.

Special effort will be made to improve the present hospital and dispensary facilities for the treatment of the venereally diseased. A recent survey made by the society showed that not only were the number of clinics and dispensaries in New York city inadequate, but that out of the twenty-eight in Manhattan alone, only seven came up to standard requirements.

The society also hopes to educate hospitals and dispensaries in the special value of follow-up work in venereal cases through social service workers, that a continued attendance may be assured and that the patient shall be induced to bring for examination other members of the family who may be infected.

The name of the society will be changed to the New York Social Hygiene Association. Offices are at 105 West Fortieth street, next to those of the American Social Hygiene Association, Inc., of which association it is a member. The national association does not interest itself directly in local affairs.

## VAST WELFARE ACTIVITIES UNDER WAY[1]

### Welfare Department of The National Civic Federation Reports Amazing Progress for the Past Year

A record of advancement and achievement under extraordinary conditions marks the year's work in the Welfare Department. It has been a year of contradictions. Precedents have proved of little value throughout the period, and yet there have been evident signs of remarkable progressiveness among our business leaders along the lines which this department follows. We entered on the year's work in the midst of business depression extending back before the outbreak of the European war and painfully accentuated immediately after war began. It might have been expected that the demands on our organization would have fallen off at such a time, but, on the contrary, they increased greatly in emphasis and volume. It was brought home to us that in slack times, when absorbing activities are relaxed, far-seeing employers turn their attention to plans for improvement which they may long have had in mind, but which under the pressure of prosperous seasons they could not undertake, thus utilizing unwelcome leisure in the achievement of ideals.

At the close of the period of depression there came another period of amazing prosperity as a consequence of the war, and from this industrial activity our work received a further stimulus. We saw new factories springing up, and seized the opportunity to issue an appeal to those responsible for their construction, directing their attention to the importance of devising and installing facilities for the health and convenience of their employees when organizing and equipping new plants. We invited them to inspect our permanent welfare exhibit, which occupies the entire thirty-fifth floor of the Metropolitan Tower, and in which we offer a graphic demonstration of typical practical plans for the physical, social, and mental benefit of wage earners, employed in small establishments as well as large.

Let me specify a single instance in which we have been able to serve in a very broad and practical way a great industry stimulated to enlarged activities by the war—the Remington Arms-Union Metallic Cartridge Company, with 30,000 new employees, has been in consultation with us for several months through its architect, Mr. Philip Hiss, and its industrial secretary, Mr. J. A. Page.

Thirteen thousand of these employees are women. Ten thousand have been absorbed by the town in which the plant is located, but for others the company is now building ten dormitories, each to accommodate 111 girls and each to have a high-class matron, with other attendants, where the young women will have an opportunity to entertain their friends as freely as if they were in their own homes. Special provision will be made for attractive dining halls, outside, which can be utilized at night for entertaining and dancing. Every convenience for physical comfort is being installed both in the dormitories and eating places.

Homes are being constructed in great numbers—enough to accommodate 6,000 new families. The rents are to be small, considering that light, heat, and other accommodations will be supplied. These homes may be bought by employees of the company according to their means, a plan having been adopted which my own company at Beverly has found effective. An employee earning less than a certain salary is not allowed to buy a house above a certain price. For example, a man receiving $25 a week may not take on an obligation above $2,500, while one having $35 a week is limited to a $3,700 house because he could not "swing it" at a higher price. There will be recreation and social halls and every modern device for community life. The most advanced sanitary arrangements are found in the vast ammunition and rifle plants for both the men and women, and there will be rest rooms and hospitals. There is a large lunch place for the men at the plant, and others are in contemplation.

As one result of the war also, we have had requests for help from European countries which are engaged in it. We have been asked for advice about the occupational training of women who have gone into the munition plants abroad to take the place of men called to the front, and we have welcomed the opportunity to give the benefit of our experience with regard to rest rooms, lunches, and other comforts.

Our permanent exhibit in the Metropolitan Tower has proved its value in countless ways, the activities in this connection being conducted by a very live committee, of which Mr. Leslie Graff is chairman. This exhibit is a mecca for employers seeking information. It provides standards applicable to many industries. It contains a great variety of photographs, illuminated stereopticon views, moving pictures taken on special occasions, and literature covering foreign and domestic experiences.

Lectures have been given there frequently by scientists, employers, and managers of industrial welfare departments. These lectures, well attended, have included accounts of the activities of employers in different lines of production, the methods employed in conducting welfare work, and the means of solving problems of installation. (In typewritten form they are now at the disposal of men and women who, recently entering the field as welfare workers, are learning how to administer their duties successfully.) They have covered many subjects, such as "Physical Examination of Employees," by the physician in charge of a large manufacturing plant in Massachusetts; a general survey of the welfare work for the great force of an electric company in New York state; accounts of the ambitious scale of welfare work in the clothing trades both in Chicago and New York, with emphasis on the value of personal contact; the work in connection with transportation lines; and vocational training for retail store efficiency.

An afternoon was devoted wholly to a meeting of 300 librarians, at which was given, with stereopticon illustrations, a full account of welfare work in various industries. One of our lectures, given by a specialist, on "The Relation of Dentistry to Health, or Stomatopathy," has been helpful in calling to the attention of employers the advisability of including this subject in welfare programs. The subject of employers' dental clinics was treated by Dr. Louis C. LeRoy.

Shortly afterward the Metropolitan Life Insurance Company established such a clinic for its employees, and during the first six months 2,385 employees were given prophylactic treatment. Five chairs are provided, with five operators and five women assistants, and the equipment includes locker rooms, a sterilizing room, and a room with complete outfit for the treatment of emergency cases. Arrangements have been made to give each employee who cares to take advantage of the offer two prophylactic treatments each year. This is the first undertaking of the kind on anything like so important a scale.

The Frankford Arsenal asked us for information as to whether, as had been reported, water issuing from a bubbling fountain caused injury on striking the teeth. An investigation by Dr. Leroy lead to the conclusion that

[1]This is an abstract of the report of Mr. L. A. Coolidge, chairman of the Welfare Department of the Federation, made to the annual meeting, January 17-18.

there is no real danger of this character from the bubbling fountain, a matter of serious consequence in view of the general adoption of these sanitary devices in industrial plants and public places.

The work of disseminating information through our exhibit and through our lectures has been supplemented by much individual effort. Beginners in welfare work have

Fig. 1. Permanent welfare exhibit of the Welfare Department of The National Civic Federation.

been brought in touch with persons having long experience in its administration. I remember especially an interesting luncheon in our welfare exhibit hall, when one expert of wide experience in sanitation and medical welfare work explained camp and plant sanitation to a man who had given up the profession of metallurgical engineering to take charge of the welfare work of a large mining company in South America. The same officer on another occasion was told by another expert of the latest improvements in housing and recreation. (Stenographic reports of these conferences might well be reproduced in this report, could it be done without excluding other matters which must be brought to your attention.)

Such conferences clearly demonstrate that, in origin and development, welfare work is only an active and intelligent recognition that industry does not and cannot operate in a vacuum. It is a human activity. It must draw the breath of life from the surrounding atmosphere, and it must do its share to keep this social atmosphere clean, wholesome, and buoyant. In this spirit the sanitation expert of one of our largest corporations said in the course of a conference: "We are going on the principle that this welfare work is not a separate part of the business. It is a part of mining and manufacturing; it is a part of making steel. It is not only a paying proposition; it is something to which the employees are entitled." On another occasion, in our conference rooms, a welfare expert made this statement: "To show the effects of our welfare work and all the activities included therein, we keep an account of the number of days worked per man per month; two things are shown—first, the increased interest of the man in his work and in his responsibility, and, second, the increased physical ability to work." Another trenchant utterance, revealing the same doctrine, was made in a similar conference by a representative of a large company, who said: "The welfare work we do centers about the principle that efficiency depends on health. That is the justification to stockholders for the money that we expend in welfare work." Without this social and civic atmosphere, companies operating in remote districts are confronted with the menace of unstable and drifting labor supply.

These conferences which we arrange between the representatives of various companies are vitalizing. They bring together men who have a record of achievement in providing or maintaining wholesome conditions of life and work as indispensable elements of business success and representatives of companies searching for information as to how to handle similar large undertakings.

A new undertaking of the Welfare Department this year has been the definite attempt to interest boards of trade and chambers of commerce in inaugurating industrial welfare departments similar to the trade welfare committees established by the American Iron and Steel Institute and the American Institute of Mining Engineers, both of New York, and the Wholesale Clothiers' Association of Chicago.

These employers' industrial welfare committees are encouraged to collect and publish information concerning model welfare institutions of leaders in their respective industries; to meet periodically for conference concerning conditions of employment; to determine on certain standards for improvements applicable in principle generally, and to cooperate with state and municipal boards of health in promoting industrial hygiene.

We can speak with pride of the achievements of Mr. W. L. Saunders, chairman of our New York Welfare Committee, who, when elected president of the American Institute of Mining Engineers, immediately secured the appointment by the institute of a special committee on welfare work. This body will especially advocate the principle that in engineering problems the human factor in the operating departments should be regarded as of equal importance with all others.

Our latest achievement of this character is the Industrial Welfare Department of the Detroit Board of Commerce, before which body your chairman appeared by invitation last April. A definite recommendation given on that occasion for the organization of such a department

Fig. 2. Lecture room of the Welfare Department of The National Civic Federation.

was promptly adopted. The president, Mr. Charles B. Warren, at once assured us that the step would be taken. An expert was employed and a fine welfare exhibit, on lines similar to that at our national headquarters, was established. An active campaign is now being conducted in Detroit. Already committees have reported on ventilation and lighting. The live character of the work is indicated by the recent announcement of a meeting to be ad-

dressed by leading welfare workers on industrial welfare nursing and industrial safety.

The Detroit Board of Commerce was asked to help extend the practice of welfare work by collecting for the benefit of local employers information as to the best examples of welfare work in that community. These they were in turn requested to furnish to us for the information of employers for whom we seek to interpret such humanitarian efforts. The board was also advised to organize local welfare committees, by trades or jointly, to study operations in industry which cause disease, to suggest means of preventing industrial disputes, and to hold conferences of employers to bring out useful welfare features for the benefit of all. It was especially urged to advocate administrative welfare boards composed of officials and heads of departments in each industrial force, and to coordinate all activities for the benefit of the employees.

We have helped also to develop corporation welfare departments. In advising one great mining company as to how to find a point of contact with its workmen, we suggested the distribution of bulletins in several languages, giving information to which employees are entitled, and we laid stress on the formation of a welfare board which would represent systematic efforts to keep the company in constant touch with the mass of the wage-earners. Our experiences with the discouragements which come to companies and to welfare workers where no orderly system is in practice indicates that of first importance is the organization of such a board. Its object is to secure, first, the cooperation of heads of departments, superintendents and foremen; and, second, the confidence as well as the cooperation of the employees.

We have been gratified by the acceptance of the various recommendations made by our expert consultants. No theories are advanced which will not operate in practice. Of that fact we believe ourselves capable of convincing inquiring employers. Nor is the federation's Welfare Department content with maintaining exhibits, giving lectures, and bringing about conferences between the expert and the experimenter. We keep in close touch with the actual operation of company schools, hospitals, clubs, and recreation facilities, with the health and safety devices, and the housing and sanitation plans throughout the country. We are equipped to furnish and do furnish itineraries for men and women in charge of welfare work seeking firsthand and concrete illustrations to help in the solution of special problems, thus insuring them the largest possible return on the time and money invested in educational journeys.

How we shall answer the many inquiries concerning the wisdom of various plans depends, of course, on the particular phase of welfare work under consideration. If the inquiry bears on some feature which has been much discussed in the public prints, which has furnished conspicuous failures as well as conspicuous successes, to the confusion of the student, we make an effort, first, to give the subject its proper perspective by setting out the fundamental conditions under which this particular feature of welfare work sprang into existence. Then we give concrete illustrations of plans that have failed and the plans that have succeeded, taking care to throw into bold relief throughout the description the circumstances which unquestionably caused success or failure.

The United States Steel Corporation is planning to build homes for immigrant bachelors. On the general subject of housing in industrial villages, the statement of Mr. C. L. Close, manager of the Welfare Board, in an address in New York last year is of special interest:

"It is believed the essential provisions of water supply, sewerage, lighting, and other requirements for the public health of our towns cannot be fairly criticised. The housing provided by the corporations in these towns is perhaps better suited to the needs of the skilled workmen than to the wages of the unskilled laborer. This is but natural, since the organization of the new plant demands, first of all, a force of skilled men, who must be drawn from older plants where they have established their families. In order to induce them to come to the new plant, provisions for housing them must be fully worked out beforehand, because they will not come and even temporarily shift for themselves, as the unskilled laborers, largely foreigners without families, are accustomed to do in the beginning. Furthermore, no industry in this country has, so far, solved satisfactorily the problem of housing unskilled foreigners whose families have not yet followed them to this country. These men earn low wages, out of which they seek to save the utmost amount possible. They have been accustomed to ways of living which we must try to change, and yet which are much cheaper than those ways in which we wish to have them live."

These are only a few of the subjects, recently covered in connection with the work of various corporations, which describe, beside company's stores and housing, recreation, lunch rooms, club houses, churches, hospitals, town sites, village plannings, and schools for employees' children.

L. A. Coolidge.

## NOTABLE INSTITUTION HAS ANNUAL MEETING

### Associated Out-Patient Clinics Reports Excellent Year, Though Short of Funds—Financial Help to Come

The third annual meeting of the Associated Out-Patient Clinics was held at the New York Academy of Medicine on April 19. Although the work of the association for the past year has been handicapped by lack of funds, the executive committee was able to report a number of important accomplishments, as follows:

Exhaustive standards for surgical and neurological clinics have been formulated, and a chart showing pathologic effects of industrial dusts has been prepared.

The relation of the out-patient department to health insurance has been a matter under discussion. The association voted to appoint a subcommittee to cooperate with the Committee on Social Insurance of the American Medical Association to study the problem of health insurance in its various aspects and applications to the dispensary.

The association also unanimously voted to request its members to contribute $5 each toward the publication of the annual report in view of the fact that the contribution of the New York Foundation has been entirely exhausted and no funds are available for the publication of the report.

The association hopes to receive a considerable sum from one of the philanthropic foundations to enable it to continue its work along the lines hitherto pursued.

The following officers were elected for the ensuing year: Rev. George F. Glover, president; Dr. John Winters Brannan, Howard Townsend, and William V. S. Thorne, vice-presidents; Dr. S. S. Goldwater, treasurer; John W. Fiske, secretary. Dr. E. H. Lewinski-Corwin is acting executive secretary of the association.

After visiting every almshouse in the state, the Illinois State Charities Commission and the State Board of Administration have gone on record as favoring a law which will permit two or more counties to unite for the erection and maintenance of a district home for the poor. The commission also urges on the next General Assembly an enactment which will break up the practice followed by a number of Illinois counties of letting the superintendency of the county farm to the highest bidder on the land and the lowest bidder on the keep of the inmates.

## EUROPE'S WAR HOSPITALS

### May Be Installed in an Hour—To Do Efficient Work—Killing Is Done by Machines, but Healing Is Done by Men and Women

The practice of medicine and surgery seems to be almost the same in peace and in war. In the one case we deal with the individual, and in the other with large groups; but just as in peace we find some physicians and some surgeons busying themselves in every waking hour with the care of a very few patients and seeming never to be done with their tasks, so in war we find poorly organized effort producing infinitely small results. On the other hand, there is a common saying that it is only busy men who have time to do things—that is to say, it is only busy men who have their business organized in such a way that they can do many things. In war, organization is everything, and the European war is no exception to the rule; indeed, it is an emphasis of this rule because it is on such a huge scale.

Fig. 1.

Theories and practice do not always jibe well with each other, and theories concerning the practice of medicine and surgery and the administration of hospitals, and often, indeed, the practice of medicine and surgery and the administration of hospitals in times of peace, may go along indefinitely—poorly organized, yet without comment, and without anyone appreciating the fact that the organization to do the work is poor; yet, when war comes, and it is necessary to care for thousands, even hundreds of thousands, of sick, then poor organization in the medical and hospital departments is emphasized at once.

When war comes, no medical corps is ever ready; that is naturally so. Just as the surgeon without experience is never a skillful surgeon, so a medical department of a government is never efficient excepting under pressure of actual experience.

Europe has now had the experience of taking care of great numbers of people during sickness and injury, and during periods of the greatest stress, such as comes in the sudden propulsive movements of battle, and a good many of our far-flung theories of hospital administration have vanished, have proved themselves wholly unequal to the strain—that is to say, they have proved themselves mere theories that do not work in practice.

There are many lessons for hospital administrators to be gained by a study of the medical service in the European war. Last month we had something about the transportation of the sick and hurt, and we applied those lessons to our modern hospital administration; the month before we had apparatus and equipment for the care of the individual in the hospital. This month we are permitted to study somewhat the employment of emergency hospitals on the European battlefields, thanks to the brilliant report of Surgeon A. M. Fauntleroy, of the navy, and to Surgeon-General Braisted, who has so kindly allowed us to use the illustrations in that report.

Running rapidly through Dr. Fauntleroy's report, we gather that not a great deal of serious study of theoretic organization has been wasted in the creation of the hospital service—at least in the allied armies. When the war broke, the peace hospitals were on about the same plane as our own; in most of them, no doubt, it took a dozen people to admit a single patient and to get him to bed, and red tape was the rule just as it is with us; but all that red tape was quickly found to be unserviceable and it became necessary at once to change the order, so that one man might admit a dozen sick or hurt soldiers, and it also became necessary to create hospital conditions so that one person, whether surgeon, the assistant, orderly, or nurse, could do the maximum amount of efficient service for the greatest possible number of patients in the shortest time with the least waste of energy, and it may be fairly assumed that at the time that Dr. Fauntleroy was an observer on the western battle fronts, the workableness of hospital administration had arrived at its highest possible achievement.

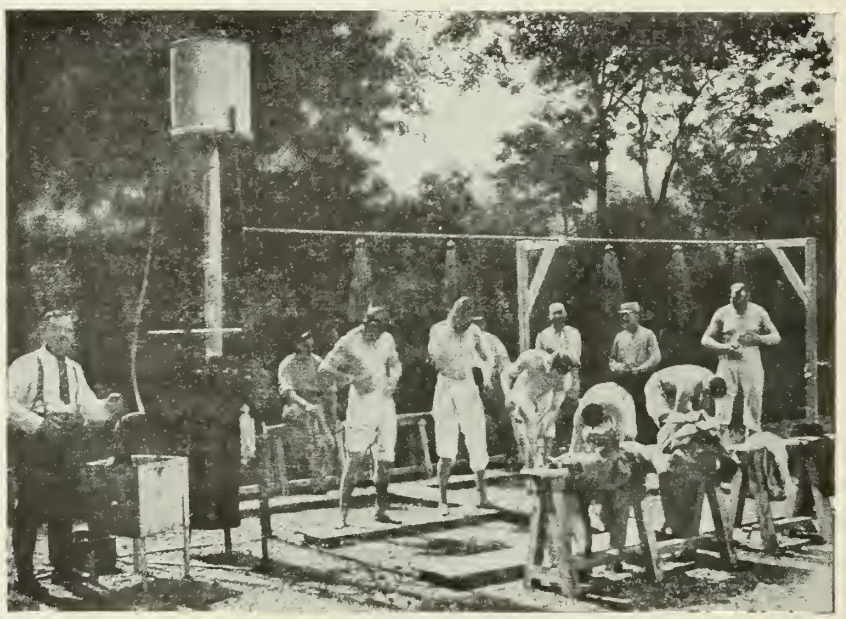

Fig. 2.

Without going into the technical character of hospital service in war, we might just run rapidly through the variations of that service. There is, first, the sheltered knoll just behind the battle front, or, indeed, there is a niche in a trench to which the wounded may be taken for first aid and temporary dressings; then at the earliest possible moment they are moved back to the field hospital,

where the rudest surgery can be done on the most necessitous cases, such as the stopping of a hemorrhage or the care of a perforated wound of the intestine or stomach. At this point, too, the patient may be tided over the period of shock and then started on the longer journey back to the base hospital, from which place he can be taken home, and finally to a convalescent hospital if there is a hope that he may be restored to health, so that he can rejoin the troops.

Fig. 3.

At all the way stations—that is, the field hospital and the base hospital—it is sometimes necessary to do quick equipment and to prepare for the care of great numbers of injured as the result of some unexpected battle, and just at this point is where our most graphic and insistent lesson comes in. We are accustomed to think in terms of months and even years of the installment of a power and light plant, of the equipment of an operating unit, a kitchen, an admission unit, and all other units that go to make up a permanent hospital. An hour is a sufficient amount of time to install a hospital on a European battlefield to do modern successful, efficient surgery on a wholesale scale, and to get the patient onto the table and off again and into bed—far more quickly than can be done in the most perfect peace institution at home.

In order to do this, there are now mobile units, and four or five motor trucks can carry everything necessary to the complete hospital. The illustrations show this better than almost any descriptive writing could do. Note the operating room in one of the illustrations, with building on one side and a motor truck on the other (Fig. 1). This operating unit was put up in perhaps less than an hour. It is fitted with live steam, electric light, hot and cold water, and an infinite variation of all of these from the motor truck alongside. The patient is taken into the operating room, the operation performed, and he is taken again into the adjoining building and put to bed. Another illustration shows patients being given an admitting bath in a wholesale way (Fig. 2). A motor truck carries hot and cold water to furnish the showers. Some patients can bathe themselves, others need to be helped, and still others must be wheeled under the shower and bathed entirely by someone else. Note another picture showing an operating room classically simple in its appointments (Fig. 3). How easy it will be to keep this room perfectly clean. Note another picture showing a ward set up in the midst of a drawing room (Fig. 4); the portable solution rack in the left foreground, the bedside tables at the right, and the beds were the work of a few minutes to install; note patient's record on the foot of the bed in the foreground and the electric light overhead.

One can well imagine that these field hospitals, with their motor trucks, could be installed almost as quickly as a fire department in one of the large cities gets to a fire, and the assembling of the apparatus and the starting of the machinery would take almost no longer than it does the engine and hose carriages to set up business and begin playing on a fire.

It has been said that war is no longer a thing of men, but has grown to be a huge piece of machinery; no doubt that is true in so far as the destruction of life is concerned. One turns the crank of the machine gun and mows down men by hundreds; one looks through a mirror, indicates the target miles away, plays on his keyboard, and the huge gun tears away a block of buildings. But it is not true that the constructive, beneficent, merciful side of war is the business of the machine. It is man-made and woman-made; efficiency comes from the individual and not from the mass. The very simplicity of equipment for the care of the wounded in war emphasizes the fact that it is not machinery that brings efficiency, but it is the skillfulness of men and women. In other words, it is the personal equation. So it is in our hospitals at home; better a few dollars for equipment and a master director of a department than the most elaborate equipment ever designed, with a director of mediocre ability.

Fig. 4.

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The need of a local hospital is being agitated at Clinton, Ind.

# CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
*Army Medical Museum and Library, Office of the Surgeon-General, United States Army.*

**Hospital Train.** Ed. The Nursing Times, 1916, XII, No. 569.

The Great Western Railway has equipped a model hospital train for use in France. It is over 960 feet in length, and contains, besides the general wards and staff accommodations, two isolation wards and a convalescent department. The beds are arranged in three tiers, utilizing all space. Traps are installed and drain into large receptacles in order to sterilize excreta, etc. The interior is painted a yellow ochre color, and is not especially pleasing to the eye.

**Liability of the Proprietor of a Hospital for Injuries Inflicted by Reconvalescents Employed as Assistant Nurses** (Der Besitzer einer Krankenanstalt haftet für den von Rekonvaleszenten in ihrer Eigenschaft als Hilfskrankenwärter verursachten Schaden). Zeitschr. f. Krankenanstalten, Leipzig, 1916, XII, No. 9.

A patient was treated at a private hospital for pneumonia. Being in a highly febrile condition, he jumped out of his bed, but a reconvalescent, whom the chief nurse had appointed to supervise the ward temporarily, threw him back on his cot with such force that the patient's spine was fractured. The injured man sued the proprietor of the hospital for damages. He lost his case in the lower courts, but the supreme court (Reichsgericht) decided in his favor, the proprietor of the hospital being compelled to pay him an annuity of $300.

**The Value and Importance of Maternity Hospitals.** E. Gustav Zinke, M. D. Jour. of Michigan State Medical Society, 1916, XV, No. 4.

A plea for more and better maternity hospitals in order to reduce maternal and fetal morbidity and mortality. Every physician, no matter how favorable his experience in obstetrics may have been, should always realize that pregnancy from the beginning to the end is, under the most favorable conditions, an event of grave importance. The author compares the advantages and accommodations of the hospital to the home, and also the additional cost to the patient in the hospital in comparison to added work and worry of the management of labor in the home. It is best to disregard individual cases and assume the problem in its entirety, and, whatever is best for suffering womankind, that must we do.

**The Municipal Hospital Vittorio Emanuele III. in Tripolis.** Dr. P. Tria. Riforma medica, Napoli, 1916, XXXII, No. 11.

When the Italians took possession of Tripolis, they at once proceeded to organize the social and hygienic services. As the population is very mixed, the hospital service has to contend with many difficulties. The Vittorio Emanuele Hospital receives Christians, Hebrews, Arabs, and Greeks, and has established special wards for the various nationalities. In many cases special foods have to be prepared for these patients. The author complains that there are not sufficient means to meet the present conditions in Tripolis. He says that Italy has made less progress in hospital conditions during the last thirty years than other countries. Thus from 1902 to 1907 the hospitals of Italy increased only 5.5 percent, while the hospitals of Norway increased during the same period of time 17 percent and those of Germany 15 percent.

**Laboratories, Hospital.** Ed. The Journal of the Amer. Med. Assn., 1916, LXVI, No. 15.

The author questions whether the American hospital has done its proper share in recent years to encourage the support of a department so potent for progress. Few independent hospitals and many of the larger teaching institutions can claim equipment only for routine work. This is due not only to indifferent members of the profession, but rather to those who are responsible for the financial support and maintenance—namely, the board of trustees, composed principally of laymen. The functions of the laboratory may be summed up as follows: (1) to aid in the diagnosis, and therefore the intelligent treatment of disease; (2) to investigate new methods of diagnosis and treatment, and put them into use with the least possible delay; (3) to advance, by investigation, our knowledge of the cause, course, diagnosis, and treatment of disease. The trustees must be awakened, where necessary, to an intelligent conception of the real value, to the hospital and the community, of the laboratory as a factor in the elucidation of the problems of disease.

**The Work of a Service for Cerebrospinal Meningitis in a Hospital at the Front** (Fonctionnment d' un service de méningites cérébro-spinales dans un hôpital de l'avant), J. Pignot and J. Terrace, Paris médical, 1915-16, V, No. 28.

In one of the French armies at the front a considerable number of cases of cerebrospinal meningitis occurred. To have transported these patients into the interior of the country for treatment would have resulted, without any doubt, in the death of most of them. A special hospital was therefore established for these patients immediately behind the front. As soon as a soldier showed the first symptoms of cerebrospinal meningitis he was at once removed to this hospital and subjected to an energetic serotherapy. So successful was this service that of twenty-six patients treated at the hospital twenty-two completely recovered, which shows that an early serum treatment in this disease is essential for a cure.

**Contagious Hospitals, Aseptic Technic Method for.** David Murray Cowie, M. D. Jour. of the Mich. State Med. Soc., 1916, XV, No. 5.

The University Hospital has put into operation, as an investigation, the aseptic technic method, ignoring the "within three feet of the bed" and the air-borne theory, and have supported the idea that the great majority of contagious and infectious diseases are communicated by either direct or indirect contact. Proof of this theory would result in a great economic factor in contagious work, as, for example, a nurse who is not fully occupied with the needs of a single patient may be utilized to care for several, thereby increasing the efficiency of the nursing staff.

During the college year 80 students made over 800

visits to the bedsides of highly contagious patients, 35 nurses served on an average of 46 days each; 22 doctors made frequent visits to the wards and 3 members of the staff were in constant attendance. All of these people, including maids, etc., observed the rigid technic, and, as a result, no infection was carried outside and only one intern contracted scarlet fever. Only 2.23 percent of patients contracted a cross infection, and these at a time when the wards were crowded and were probably caused by breaks in the technic.

**A Visit to the Hospital Establishments of the Red Cross at Lyons** (Visite aux installations hospitalières de la Croix-Rouge de Lyons). Bulletin internat. di Sociétés de la Croix-Rouge, Genève, 1916, XLVI, No. 185.

By an agreement between the governments of France and Germany, all prisoners of war who are so seriously wounded that they will not be able again to serve in the army, are to be returned, by way of Switzerland, to their home country. A great number of such prisoners of war have already been exchanged between the two countries. The French soldiers returning from Germany are received and cared for by the French Red Cross. This organization has established a number of hospitals in and near Lyons for the reception of the unfortunate soldiers. For the tuberculous patients a special hospital was established in a sunny, salubrious region some kilometers from Lyons. In all these hospitals trained Red Cross nurses are employed. According to their injuries, the patients are taught various occupations. Thus the blind learn brush-making, basketmaking, massage, etc. Those who have lost their lower extremities are taught to patch shoes, etc. The international Red Cross committee who visited these hospitals was most favorably impressed with the work and the results accomplished.

**Occupation as a Remedial Factor in Hospitals for the Mentally Sick.** Emily L. Haines. Boston Med. and Surg. Jour., CLXXIV, No. 17.

Work is a remedial factor, and occupation, in a greater or less degree, for each patient, according to his or her personality, gives diversion, interest, and benefit. Work affords mental and physical exercise to the patient and represents an economic value to the institution. Appropriations for shops for various mechanical and handicraft pursuits would be of value. Such shops and industrial rooms, to be ideal, should be light, sunny, and in every way attractive; they should possess unforeseen appeals and possibilities for the work which will invite daily attendance. The list of occupations is varied, including the weaving of toweling, denim, blankets, and rugs. Basketry is a mode of occupation, also rug making, while pottery is one of the late crafts. Occupation as a remedial measure is a field with far-reaching possibilities.

**The New Hospital at Moss** (Moss nye sykehuser). Dr. T. Nannestad Tidsskrift f. d. norske Laegeforening, Kristiania, 1916, XXXVI, No. 5.

The town of Moss, in southern Norway, with about 4,000 inhabitants, has replaced its old hospital, which was erected in 1848, by a new building. It is a two-story structure, with a basement and attic, and has room for about 30 patients. Both floors are traversed from east to west by a central corridor, 2.75 meters wide. In the center the corridor widens out to 4.25 meters. This space serves as a parlor for the patients. The sick rooms are ranged on both floors along the south side of the building. On the north side are the sterilization, operation, and x-ray rooms, the kitchen, rooms for the nurses, etc. The hospital is lighted by electricity and has a central warm water heating plant. This very practical small hospital was completed at an expense of only 140,000 crowns (about $38,000).

**The Control of Hospitals in the Greater Interest of the Profession.** R. C. Fish, M. D. The Med. Council, 1916, XXI, No. 4.

The question of the appointment in the usual way, or selection after competitive examination, of applicants for hospital positions and staff service is a matter needing wide and courageous action. By present methods, in some hospitals, many bright men are practically debarred. Hospital competition in cities of 30,000 and over is compelling many good men to seek hospital service or enter nonmedical employment. The disappointed ones, unless men of iron, are apt to stoop to chicanery and illegal practices, and that not wholly of their own volition, but because of unjust conditions brought about by unfair hospital administration. Some abuses would be corrected by placing all hospital positions on a basis of competitive examination. Hospital reform and professional freedom should go hand in hand. We depend too much on business men to manage our hospitals. There should be reorganization of hospitals, with short terms for trustees and with medical members preferred; a competitive basis of attainment for surgeons and physicians in hospital service; favoritism of some special college should not be permitted; ward service should be a promotion from out-patient service.

**The New Military Hospital at Venlo** (Het nieuwe militaire hospital te Venlo). Dr. C. J. Prins. Mil.-geneesk. Tijdschrift, Utrecht, 1915, XIX, No. 3.

The new military hospital was opened in August, 1915. It is situated on a portion of the extensive grounds of the military post at Venlo. The hospital consists of a large two-story central building and four one-story pavilions. The ground plan has the form of a rectangle. The four pavilions are placed in the four corners and the main building is in the center. All five buildings are connected with each other by covered galleries. The central corridor which traverses the main building in its full length is extended at each end by a covered gallery, which meets the gallery connecting the two pavilions at each end at a right angle. The hospital is surrounded by a beautiful park.

**Placing and Keeping Patient on Hot-Water Bag.** Jour. of the Amer. Med. Assn., 1916, LXVI, No. 15.

Recently the Supreme Court of Oklahoma affirmed judgment for $2,500 damages in favor of the plaintiff against a physician and a sanatorium. The plaintiff employed the defendant to perform an operation for hernia. During the operation the patient went into collapse and was removed to a recovery room. Hot-water bags were used to warm the bed, and by mistake the patient was placed and held on an overheated bottle and suffered severe burns. The jury found ample evidence to justify them in finding that the physician had not exercised proper care. There was no contention that the judgment against the sanatorium was not warranted, nor could it be said that the judgment was excessive.

Dr. Joseph H. White, of the United States Marine Hospital at Memphis, Tenn., has been detailed to serve as director of a campaign against malaria, which is being waged by the malaria conference of Tennessee, Arkansas, and Mississippi. Under the direction of the conference, Bolivar county, Mississippi, is said to have entirely eliminated malaria from within its boundaries last year at a cost of $40,000.

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*Army Medical Museum and Library, Office of the Surgeon-General, United States Army.*

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# DEPARTMENT OF NURSING

Conducted by MISS ANNIE W. GOODRICH.
*Teachers' College, Columbia University, New York City.*

Please address items of news and inquiries regarding Department of Nursing to the editor of this department, Teachers' College, Columbia University, New York City.

## The New Orleans Convention

The New Orleans convention of 1916, at which were registered over 600 delegates representing thirty-nine states, will, we believe, stand out as one of the most important gatherings of the three national organizations of nurses. From the opening meeting at the Athenæum on April 27, when the organizations were most graciously welcomed by Mr. Newman, commissioner of public safety, and Miss Gillespie, the president of the Louisiana State Nurses' Association, and when Mr. Rosen, of the board of the Touro Infirmary, gave his interesting address on the "Influence of Laws Regarding a Profession on the Profession Itself," until the last night, May 3, when, under the auspices of the National League of Nursing Education, Dr. Rudolph Matas, of the department of surgery, Tulane University, most sympathetically and comprehensively presented the growth and expansion of nursing education that had definitely placed nursing among the professions, and Dr. Brandt Dixon, president of Sophia Newcomb Memorial College, gave his scholarly address on the higher education of women and its relation to the education of the nurse, the interest of the members in the comprehensive and varied program never abated.

Questions of no small moment were presented and received the favorable consideration of the members of the three organizations where they were jointly concerned, or of the individual organizations where the matters pertained only to that particular body.

The most important changes determined on were the incorporation under a national charter, biennial meetings, and the adoption of the delegate convention system of representation. That changes of such consequence could be accepted was due to the very efficient work and clear presentation of the subject of the revision committee under its able chairman, Miss Sarah E. Sly.

The acceptance of the by-law providing for the formation of sections brought into immediate existence a section on private duty nursing with Miss Ott, of Indiana, as chairman, and a mental hygiene section, with Miss Elnora Thompson, of Chicago, as chairman.

The Advisory Council, which is composed of the boards of directors of the American Nurses' Association, the presidents of the state associations or their representatives, and the chairmen of sections, promises to be a very valuable body through which to reach the nurses at large. Many of the questions of importance were presented to this body for consideration and recommendation before being presented to the delegates.

The Bureau of Legislation, under Miss Mary C. Wheeler, of Chicago, presented its revised list of schools of nursing accredited by state boards of nurse examiners, and also the list of registered nurses by states. This list showed the total number of registered nurses in the United States, at the date of the issuance of this pamphlet, to be 70,218.

The work of the so-called Subcommittee on Legislation, with Miss Anna C. Jammé, director Bureau of Registration of Nurses, State Board of Health, Sacramento, Cal., as chairman, had so increased in scope that it was decided to make this a separate committee and to refer to it all questions concerning the statutory control of the practice of nursing and nursing education. It is hoped that through this committee a greater uniformity in state laws and state curriculums may be encompassed.

The legislative session was one of the most interesting sessions of the convention, and at it papers were presented by Miss Eyre, of Colorado, on "Standardization of State Requirements for Training Schools for Nurses;" by Miss Hilliard, inspector of nurse training schools in New York state, on "Methods of Inspection;" and by Dr. C. A. Bohn, of New Orleans, on "The Present and Future of Reciprocity." In addition to his most interesting and suggestive paper, Dr. Bohn presented at the round table following this session his exceedingly comprehensive schedules for inspection and accrediting of schools.

Two papers of unusual interest and importance were those presented by Dr. M. Evangeline Jordan, of Los Angeles, Cal., on "The Care of the Mouth During Pregnancy," and by Assistant Surgeon C. V. Akin, of the United States Public Health Service, on "Plague Eradication and Prevention in New Orleans."

The evening devoted to Red Cross work was a notable one. Miss Delano reported that over 600 nurses were serving on the state and local Red Cross nursing committees that had been organized in every section of the United States since the affiliation of the American Nurses' Association with the American Red Cross nearly seven years ago, and that the total enrollment of Red Cross nurses is now 6,200. She gave a most illuminating account of the assistance that has been rendered by the Red Cross in our own country, as well as of the work that has been done in Europe during the war, stating that units had been maintained in England, France, Belgium, Germany, Austria, Russia, and Servia, and that 255 nurses had been sent over. It was of special interest to learn at this meeting that Louisiana was among the first states to appoint committees on Red Cross nursing service, with Miss Emma L. Wall as chairman of the first committee. It is also interesting to note that the first applications for enrollment as Red Cross nurses received in Washington came from New Orleans, and to New Orleans also belongs the credit of having called out for relief work the largest proportion of their total enrollment of any committee. During the Mississippi floods in 1911 the Louisiana committee was asked to send nurses to aid in relief work and nearly one-half of the total enrollment responded.

Dr. Dowling, president of the Louisiana State Board of Health, followed Miss Delano with his interesting paper on "The Red Cross Nurse in Time of Disaster." Miss Babb, of Greenville, S. C., presented a charming paper entitled, "How a South Carolina Community Provides for Sanitary Inspection," while Miss Gladwin's simple, but most pathetic, story of her tragic experience in Servia will not soon be forgotten.

This is but the briefest and barest outline of a convention that cannot fail to bear fruit in many fields. For the most unusually interesting program, every detail of which was carefully scheduled, the organizations were indebted

to Miss Martha Russell, of New York, and Miss Effie Taylor and Miss Mary Lent, of Baltimore.

The organizations also feel deeply indebted to Miss Emma L. Wall, and to Miss Daspit, her assistant, as well as to their associates, for the efficient way in which the entire convention was managed and the unceasing thought that was given to the comfort, pleasure, and even the health of those in attendance. Groups of student nurses acted as ushers throughout the proceedings and carried messages to and fro. Through the Federation of Women's Clubs and Dr. Barr, of the Young Men's Christian Association, a very beautiful musical program was provided for the mass meeting on Sunday and for the social hours. A most restful and delightful break in the deliberation of the sessions was the beautiful river trip provided by the sisters of Charity Hospital and of the Hotel Dieu. On the day after the convention Sister Stanislaus, superintendent of Charity Hospital, arranged for a visit and personally conducted a group of remaining nurses to the leper colony.

A full account of the proceedings and of the papers presented at the meetings of the American Nurses' Association, as well as many of those read at the meetings of the two other organizations, will appear in the June, or convention, number of the *American Journal of Nursing*. Copies may be secured through the editor, Miss Palmer, at the Rochester office. Papers of particular interest to the readers of the *Public Health Nursing Quarterly* and THE MODERN HOSPITAL will appear in later issues of these magazines.

A synopsis of the proceedings of the National Organization of Public Health Nursing, together with the names of the newly appointed officers, has been promised for the July issue of THE MODERN HOSPITAL.

The officers of the National League of Nursing Education for 1916-17 are:

President, Sara E. Parsons, R. N., Massachusetts; first vice-president, Anna C. Jammé, R. N., California; second vice-president, S. Lillian Clayton, R. N., Pennsylvania; treasurer, Mary W. McKechnie, R. N., New York; secretary, Effie M. Taylor, R. N., Maryland.

Executive Committee: Louise M. Powell, R. N., Minnesota; Elsie M. Lawler, R. N., Maryland.

Officers of the American Nurses' Association: president, Annie W. Goodrich, R. N., New York; first vice-president, Adda Eldredge, R. N., Illinois; second vice-president, Elsie M. Lawler, R. N., Maryland; secretary, Katharine De Witt, R. N., New York; treasurer, Mrs. C. V. Twiss, R. N., New York.

Board of Directors: Jane A. Delano, R. N., Washington, D. C.; Mary M. Riddle, R. N., Massachusetts; Ella P. Crandall, R. N., New York; Helen P. Criswell, R. N., California; S. Lillian Clayton, R. N., Pennsylvania; Mathild Krueger, R. N., Wisconsin.

## The New Profession of Public Health Nursing and Its Educational Needs[1]

BY C. E. A. WINSLOW, ANNA M. R. LAUDER,

Professor of Public Health Yale Medical School, and Curator of Public Health American Museum of Natural History, New York.

Many of the professions which play an important part in the social organism of today can trace their ancestry back through centuries, some of them even to the dawn of recorded human history. The doctor, the lawyer, the soldier of the Athens of Pericles would be vastly puzzled by the technic of his modern representative, but he would find essential aims and general methods in the main familiar and comprehensible.

The sick-nurse may claim kinship with an equally ancient and an equally noble line. As the lawyer owns a continuity of interests with Lycurgus and the physician with Hippocrates, so those who nurse the sick are carrying on the beneficent work of the deaconesses in the early Christian Church and of the Sisters of St. John, St. Francis, and St. Vincent de Paul in medieval times. Nursing, in its original sense, is one of the most ancient of all businesses; for, as soon as mankind emerged from brutishness, the care of the sick and wounded became a pressing need.

There is another group of nurses, however, engaged in work of a widely different character, work which has so little in common with the nursing of older days that St. Hildegarde would never in the world own its practitioners as her professional successors. I mean, of course, the public health nurses, who make up, as I believe, the nucleus of one of the greatest of future professions, a profession whose entire aim and method of approach is characteristic of the modern world.

The demand for the services of the public health nurse is an outgrowth of the shift of emphasis in the public health campaign from legal and restrictive to educational and constructive measures. Some important things, like the purification of public water supplies, can be directly accomplished by official action, and legal restrictions are and always will form an essential part of the control of communicable disease, yet it is more and more clearly recognized that the larger problems of health require the intelligent cooperation of the individual citizen. An increasingly greater proportion of the energy of public health workers is devoted to individual education in the sanitary and hygienic conduct of the daily life, and this direct educational work is mainly the task of the public health nurse.

We owe the conception of the community nurse perhaps, first of all, to Florence Nightingale, who gave this new branch of her calling the name, "health nursing." We owe its practical working out in this country largely to our American Florence Nightingale, Lillian D. Wald. It was she who in 1902 introduced school nursing, recently inaugurated in London by Miss Honnor Mortem, into the schools of New York city. The nurse placed in the schools by Miss Wald was so successful that $30,000 was appropriated for an official beginning of the work in the following year. Today 208 nurses are employed in school inspection by the New York City Department of Health, besides 59 infant hygiene nurses, 162 tuberculosis nurses, and 117 visiting nurses engaged in other fields of public health. So far as the betterment of the health conditions of school children is concerned, the work of the nurse is now recognized as vital and essential because it is she who follows the children into the home and sees that the physician's directions are actually carried out. As has been said, the school doctor excludes the child from school —the nurse brings it back again. The percentage of physical defects actually treated among New York city school children was raised from 6 percent to 84 percent by the introduction of the school nurse.

The application of the educational force of health nursing to the problem of tuberculosis was again due to the far-sightedness and organizing ability of Miss Wald. In this new field of social hygiene the nurse has come to play a more and more important part, for the campaign against tuberculosis is primarily a matter of individual conduct, care of the excreta on the sanitary side and rational treat-

[1]Read before the Second Pan-American Scientific Congress, Washington, January 4, 1916.

ment of the living machine on the hygienic side. The most direct and immediate method of attacking this complex problem lies along the line of personal instruction in habits of healthful living, and one of the greatest needs of the present day is for an increased force of tuberculosis nurses to detect the early cases which now so often escape treatment until too late. It is estimated that in the home of every recognized case of tuberculosis there will be found on the average one incipient case in the condition most favorable for treatment.

The third important field for the visiting nurse is in the reduction of infant mortality, one of the newest and one of the most hopeful of all forms of public health activity. It is clearly recognized today that there is just one effective way to cope with this great problem—the instruction of the individual mother—so that she may give her baby its normal food and may intelligently care for it in other ways.

The distribution of pure milk, for which "milk stations" were originally founded, is now entirely secondary to the organization of a baby clinic, with its staff of nurses to do follow-up work in the home. As Dr. J. H. Mason Knox has said, "In the last analysis, however, all our work hinges on the better care of individual babies coming under our influence, and it is here that the trained nurse should be given the first place, both because of her unique opportunity and because of the good results which she has accomplished and does accomplish. It is she who enters the home, a welcome visitor, but one armed with expert knowledge and kindly act. It is she who can open the closed windows, remove superfluous clothes, prepare the baby's feedings, give it a bath as an object lesson to the mother, and perform a hundred other services which together mean the difference between life and death."

I have spoken of these three aspects of public health nursing which relate to infant welfare—tuberculosis, and school hygiene—as if they were distinct and independent specialties. This has often been the case in the past, but the wisest leaders of the nursing profession, as well as practical health administrators, have come to recognize that specialization along this line has frequently been carried much too far. Friction and confusion result from the visit to one home of several different public health nurses, and the large area covered by a nurse doing only infant welfare or only tuberculosis work causes waste of time, and militates against intimate personal knowledge of family and social conditions. Public health nursing should be organized on the lines of localities rather than specialties, so that the nurse may know her district thoroughly in all its aspects, and may come to be a sort of community mother, a trained and scientific modern representative of the good neighbor who nursed the sick and helped out in all sorts of emergencies in the village life of earlier days.

In rural districts, where the services of public health nursing are being carried by the rural nursing service of the American Red Cross, any high degree of specialization is still more clearly impossible. These devoted women must be visiting nurse, tuberculosis nurse, infant hygiene nurse, sanitary inspector, and welfare worker all in one. Above all, they must be able and willing to teach, teach, teach. The following paragraph from the regulations of the Red Cross strikingly illustrates the breadth of the field which lies before them:

"Rural nurses, although primarily responsible for the efficient care of patients, are expected to take an active interest in families, teaching by instruction and demonstration the principles of hygiene as applied to their homes and surroundings, as well as of person. They should know the health laws and what opportunities exist in their community for the improvement of unsanitary and other unfavorable conditions in which their patients live. They should be informed on social matters, and avail themselves of educational advantages within their reach to enable them to meet more adequately the needs of their people. With the support of an able and enthusiastic committee, they have unlimited opportunities for constructive work through the homes, interested individuals, private societies, country schools, and other public institutions."

Nurses are called on today to serve as sanitary inspectors, as tenement inspectors, as probation officers, as teachers of hygiene, as hospital social service workers, as agents of charity organization societies, and as welfare workers in large industrial plants. Professor Adelaide Nutting, of Teachers' College, showed me some letters that came to her desk at the opening of the fall term this year, and I shall cite extracts from them to show the sort of thing that is being expected of the nurse today:

Extract from a letter of a physician in a western city:

"I am writing to learn if you can recommend a nurse who would be capable of teaching hygiene and sanitation in the public schools of this city, as well as do the work of a general school nurse. We would like a nurse who is mature and capable of teaching as well as doing the school nursing. There are about 3,000 pupils in the public schools here. . . ."

Letter from a superintendent of schools in the South:

"We do not have either an organized truant officer or medical inspection and school nurse in our school system. As a start toward these objects, I am asking for $—— from our Board of Education for a truancy officer, hoping to be able to get in that position a woman with training as school nurse, and have her do such school nurse work as she can in connection with her truancy work."

Extract from a letter from a superintendent of schools:

"I have just been talking with ——, superintendent of schools at ——. He wants a school nurse. . . . This is a new position, and he is inclined to give the right woman quite a free hand. He says they have 1,800 children in the school and practically no foreigners. . . . Wishes this school nurse to assist the physical education instructor in medical inspection. During the year they conduct some Chautauqua work, where the nurse would have an opportunity to deliver lectures to the farmers' wives. They also have a summer school, where they emphasize domestic science, domestic art, and general industrial training. The nurse might be asked to supervise the playground activities, but this could be arranged later on. Mr. —— wants to find a woman who is adaptable and who would be interested in remaining for some time. Emphasizes social training, and would like to find a woman of considerable enthusiasm as well as special training."

Letter from the president of a western normal school:

"We are planning to secure a school nurse for the coming year. Our enrollment this year was 214. We have from 75 to 90 girls in the dormitory. In addition to taking care of the health of the girls in the dormitory, we shall desire the nurse to take charge of the physical education of the young women, and also of the medical examination and general school health of the children in the "training school," numbering about 150. We shall also expect her to have about one class per day in the normal school department along her line. Probably this will seem enough for her to do, but, if possible, we should like to have her take up the problem of health and necessity of medical examination in the rural schools, and will assist her in making such investigations as she may see fit. . . ."

Letter from a physician on the staff of a hospital in one of the large eastern cities:

"During the past year I have been developing a clinic for the investigation and treatment of diseases of metabolism in one of the large hospitals in —— along lines similar to the work carried on in the —— and ——. Our work thus far has been confined to the treatment of diabetes mellitus and nephritis. The board of managers of the hospital are very much interested in the work, which has been productive of the most gratifying results. Thus far I have been greatly handicapped because of the lack of knowledge on the part of the pupil nurses of the principles of dietetics and the elementary principles of metabolism, and even more handicapped by the fact that we have no teaching nurse who is able to instruct the pupil nurses. It is my plan to secure an educated trained nurse who will come into the hospital, supervise the care of the patients in this ward, and also act as a teacher in the nurses' training school. The position will be one of dignity, and will carry with it a reasonable salary. The board of managers of the hospital has instructed me to negotiate for such a teacher. I am appealing to you for assistance in securing such a person. Will you kindly

let me know if any of your graduate or present students are or will be available for such work?"

It is quite clear that the woman who enters the field of health nursing today is called on to perform duties of a diverse sort, differing in marked degree from those performed by the bedside nurse of a past generation—to such a degree, indeed, as almost to constitute this a new profession; yet it is clearly to the nurse rather than to the physician or the social worker that we must turn for the application of this new form of social energy.

In the first place, the nurse is a woman and as such is preeminently fitted for the function of health educator. Patience and tact are primary requisites for the task of bringing the principles of hygiene into the life of the tenements, and neither of these is a masculine quality. In the second place, the nurse has at least the fundamental basis of technical knowledge needed. She knows the human body and its reactions to external conditions and to the hygienic conduct of life. She approaches these questions from perhaps a better viewpoint than even the physician, since her training leads her to view the human mechanism as a unified whole, her vision of which is not distorted by preoccupation with special pathological conditions. It must be remembered that in most small and in many large places the only public health nurses are those employed by visiting nurse associations who combine educational work and sick nursing; and, however socialized and preventive the work of the public health nurse may be, she must be ready at a moment's notice to forget the community of tomorrow and relieve with her own hands immediate physical distress. Her influence for more fundamental things rests on her power to meet these instant needs. For this reason the social worker without a nurse's training can never fill the place of a nurse who has gained the broader vision of social service.

While the education of the nurse lays the best type of foundation for the career of the personal public health educator, it becomes increasingly manifest that this foundation must be laid more broadly and deeply than is the case at present if she is properly to fulfill her function.

Public health nursing, like any other educational work, requires a particularly sound training in fundamental principles. The public health nurse should be well grounded in the fundamental sciences of chemistry, physics, and biology, for these sciences form the basis for all scientific thinking and all scientific applications. She should know something of the principles of sociology and economics, for her work closely correlates at every point with that of the social reformer. Foreign languages are of the greatest importance; in any given case, knowledge of Italian or German or Yiddish may be absolutely essential. I heard recently of a case where Chinese was a requisite. These subjects—elementary science, elementary sociology, and, if possible, some foreign languages, with the training in English so essential for the writing of reports and the educational work of the inspector—are vital cultural or nontechnical elements in the training of an efficient public health nurse. The requirement of high school graduation before entrance on the course of the nurses' training school seems a very moderate minimum of preliminary general education for the nurse who is planning to enter the field of public health. The present class of nurses in the Massachusetts General Hospital in Boston includes nineteen graduates of first-class colleges and seventeen graduates of normal schools. Thirteen or fourteen of these women speak French, nine speak German also, and several Italian as well. The Presbyterian Hospital of New York has twelve college women in its training school at this time.

The next problem is the nature and scope of the course to be given in the training school itself. It is a matter of common knowledge that few such schools are today in a position to give to their pupils the training necessary to fit them adequately for the work of health nursing. Over 1,000 such schools have come into existence since 1890, but their establishment has often been inspired less by educational ideals than by the desire to obtain unpaid assistance in the routine work of the hospitals with which they are connected. Too often standards of admission, which are of such importance in a profession demanding unusual physical and mental and personal qualifications, are sacrificed to the need for student nurses to do the work. Too often the applicant, once admitted, is subject to severe conditions of overwork and underfeeding and poor living accommodations. Always there are the educational weaknesses inherent in an undertaking which is not primarily educational in aim. The course is apt to be carelessly planned, the teachers those who chance to be available, the teaching what they happen to find it easiest to give, and the laboratory equipment hopelessly inadequate. Most fundamental of all is the problem of time. It is absurd to attempt to train the nurses we need for the public health campaign by a course which involves two or three hours a week of theory and fifty to sixty hours in the wards—not hours of clinical instruction, but for the most part a routine of unenlightening and exhausting manual work. The relation between the hospital and the training school should be a symbiotic one; it more nearly resembles a case of simple parasitism.

The Committee on Education of the League for Nursing Education has outlined a standard curriculum which calls for a total of 675 hours of theoretical instruction, 360 hours to be concentrated in a preliminary period of four months, with no work in the wards, 75 hours in the second half of the first year, and 60 hours in each of the other four half years. This curriculum includes 60 hours of anatomy and physiology, 30 hours of bacteriology, 30 hours of chemistry and physics, 15 hours of hygiene and sanitation, 90 hours in cookery and nutrition, and 30 hours in household economy, in addition to the more technical courses in the nursing subjects proper. This outline is by no means Utopian, yet it is probable that not over 5 percent of the training schools are at present offering anything like the amount of theoretical work.

Finally, the specific training in public health science remains to be considered. This superstructure needed to convert a nurse into a public health nurse is much the same as the training needed to make a physician into a public health physician. It requires, first, a general course or courses in public health, sanitary science, or municipal sanitation, or whatever it may be called. This should include the principles governing the spread of communicable disease; the sources and vehicles of disease; the relation of nuisances and plumbing to health; the disposal of sewage and garbage; the problems of water supply and milk supply and food supply in relation to health; the effects of dust and heat, and the regulation of atmospheric conditions; the broad fundamentals of school and tenement and factory hygiene; the principles underlying isolation, disinfection, and serum therapy in the control of communicable maladies; the relation of insects to disease; epidemiology, and the organization of state and municipal health departments. Vital statistics should receive special attention in this course. The value of the nurse's work, both to her own locality and to the general cause of public health, will be enormously enhanced by accurate record keeping and intelligent statistical analysis. Second, the public

health nurse should make a special study of social problems with due consideration of underlying causes and an analysis of existing practical agencies of relief. Third, it will be of great advantage for her to extend the knowledge of dietetics and home economics gained in the training school; and fourth, special courses in psychology and educational method will greatly increase her usefulness.

These theoretical courses should be supplemented by practical field work in ordinary visiting nursing, in school nursing, tuberculosis nursing, and infant welfare work, and, where possible, perhaps by elective field work in sanitary inspection, food inspection, housing inspection, and industrial hygiene.

Progress in the higher branches of nursing education has made encouraging strides during the past few years. There are at least eight different institutions now offering graduate courses to public health nurses in Atlanta, Boston, Boulder (Colo.), Chicago, Cleveland, New York, Philadelphia, and Santa Barbara (Cal.), besides special courses offered by the State Health Departments of Kansas and Ohio.

The Department of Nursing and Health at Teachers' College in New York, especially endowed by Mrs. Helen Hartley Jenkins, and directed by Professor Adelaide Nutting, is the strongest and most fully developed of these schools. It has a departmental faculty of five professors and instructors, with eight special lecturers attached to the staff, and offers to graduate nurses programs of study of one or two years' duration in teaching in schools of nursing, administration of schools of nursing, hospital administration, public health nursing, school nursing, and teaching and supervision in public health nursing. The courses offered in Boston by the Instructive District Nursing Association occupy either four or eight months. The public health, household economics, and educational aspects of the subject are taken up at Simmons College, and the sociological problems in the school for social workers. The Chicago course, the most recent adventure in this field, is offered by the school of civics and philanthropy, and covers a period of sixteen weeks, including class room work in the school, visits of inspection to social agencies, and field work under the supervision of local public health nursing organizations.

Such graduate schools for public health nursing are likely to develop rapidly, and to approximate more and more nearly the standard which has been set by Professor Nutting in New York. The great task of the moment seems to me to be an improvement of standards in the nurses' training school itself. The need for such improvement in the elementary training of nurses of all classes was forcibly set forth by Dr. F. P. Denny, of Boston, in the Boston *Medical and Surgical Journal* for June 18, 1903. It has been urged by Dr. Richard C. Cabot and Mrs. Hunter Robb in this country and by Dr. Oldfield in England, and the superintendents of progressive training schools are making a gallant struggle toward these ideals —in a few cases with the support of far-sighted trustees. As a rule, however, the immediate needs of the hospital, for which the training school was historically created, quite overshadow the new opportunities and responsibilities which have developed in the field of public health. For a fundamental improvement in the situation I am inclined to agree with Professor Nutting that, "in the best interests of both hospital and training school, some reconstruction of (the present) system is necessary; that much of the teaching, especially all of that fundamental work included in the preparatory course now given in the hospital, should be given outside of it in a central school, which could do for a number of hospitals what each one is now trying to do for itself; and that this central school should take on itself the direction of the education and responsibility of arranging with different hospitals for the practical training of the pupil in all the various services. In other words, that the training school should rest on a foundation not unlike the medical school."

All of us who are interested in the profession of nursing realize the debt of that profession and of the public to the hospitals which have done so much for nursing education. Yet an educational institution should be organized for educational purposes, and not as an adjunct to an institution for healing the sick. A few independent training schools, free to develop as leaders, would exert a more powerful influence on the whole progress of nursing education than perhaps any other force. I understand that a definite movement is under way for securing an endowment for the training school at Johns Hopkins. I trust that it may succeed, and that this example may be followed elsewhere, for the establishment of such schools is, in my opinion, an essential need of our future campaign of public health.

### Summer Course in Corrective Nursing

The deformities that separate the child from his playmates and thus rob him of the joyful activities of childhood, and in later life limit his social efficiency, cannot fail to make a heavy appeal to those who know that a large percentage of these deformities might be partly, if not wholly, corrected.

Many nurses, especially those engaged in school work, must have felt the need of some knowledge of this subject which Miss Sweeney in her article on "Corrective Work and Its Relation to the Nurse," and which is to be published in this department next month, rightly says is rarely included in the general training.

Some will perhaps be interested in the appended announcement of the summer course to be given in the scoliosis department of the Children's Hospital, Boston, and will be able to avail themselves of this opportunity.

OUTLINE OF COURSE IN SCOLIOSIS AND FAULTY ATTITUDE

SCOLIOSIS DEPARTMENT CHILDREN'S HOSPITAL, BOSTON, JULY 3, 1916-JULY 31, 1916

Monday, Tuesday, Wednesday, and Thursday afternoons from 2 to 5. —Practical work in gymnastics—in sections. Clinical demonstrations —in sections. Taking of casts of feet and strapping. Lectures in theory and diagnosis of scoliosis and faulty attitudes. Lantern slide demonstrations of scoliosis, costume and foot deformities.

Saturday mornings, 9 to 12.—Practical work in gymnastics on clinic cases—in sections. Practical demonstration of the application of permanent and removable jackets by different methods.

In detail the course will include the following subjects.—Theory of upright position, center of gravity and its relation to balance. Antroposterior position, faulty attitudes, etiology—(1) forward shoulders. (2) round back, round hollow back, treatment and methods, records. Scoliosis. Physiological and structural. Definition. Classification. Etiology. Types. Methods of treatment—exercises, removable jackets, permanent jackets. Effects of school life. School seating. Methods of examination and recording. Feet. Etiology. Methods of examination. Flat and pronated feet—shoe deformities. Methods of treatment. Effects on posture.

Fee, $35. Course limited. Registration fee, $5. Balance payable at entrance. Application to be made to Dr. R. W. Lovett, Children's Hospital, Boston.

The erection of a tuberculosis hospital for Jefferson county, New York, has been started at Watertown. A novel feature of the building will be its unusual form. The hospital will consist of a main structure, with two wings. Instead of branching off at right angles, the wings will be set at a slant of ten degrees, the purpose being to provide the maximum amount of sunlight throughout the day.

# PHILANTHROPY AND THE PUBLIC HEALTH

Conducted by THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.
BAILEY B. BURRITT, General Director.
WILLIAM H. MATTHEWS, Director,
*Department of Family Welfare.*
DONALD B. ARMSTRONG, M. D., Director,
*Department of Social Welfare.*

Please address items of news and inquiries regarding Philanthropy and the Public Health to the New York Association for Improving the Condition of the Poor, 105 East Twenty-second street, New York City.

## SCHOOL NURSES, TEACHERS, AND PARENTS

### Need of Their Cooperation in Following Up Cases for Treatment

BY J. H. BERKOWITZ,

Special Investigator Bureau of Welfare of School Children, New York Association for Improving the Condition of the Poor.

#### NEGLECT OF PHYSICAL DEFECTS

Parents and teachers are largely at fault for the great number of children attending school handicapped by some physical defect or other, for the failure to cooperate with the school nurses in their follow-up work results in these children being allowed to struggle through school thus physically impaired.

Year after year since 1909 the school doctors in New York city have been finding that from 70 to 72 percent of the children whom they examined have physical defects, such as diseased tonsils, adenoids, defective vision, defective hearing, decayed teeth, cardiac and pulmonary diseases, etc.

During the school year 1914-1915 the number of children found having these health defects was 222,072 out of 305,665 examined. In other words, 72 percent of the children examined needed medical, surgical, or dental treatment, and only 33 percent of the enrolled 925,000 children were examined. If it is assumed that the same proportion prevails among the remaining two-thirds of children who were not examined, then there must be over 666,000 school children suffering from physical defects.

Not more than 37 percent of the children reported with defects received the necessary treatment. A large proportion of those treated owe their improved health mainly to the efforts of the school nurses in following up the cases to their homes, and persuading the parents of the necessity of having their children's health needs attended to.

#### PHYSICAL DEFECTS AND BACKWARDNESS

School records show that most of the retarded pupils are those handicapped by physical defects. Defective nasal breathing, diseased tonsils, and decayed teeth cause serious derangement in the general health of the child, and the physical impairment which ultimately results from the neglect to correct such conditions may lead to permanent abnormalities. Absences from school due to such "simple" ailments as toothache and sore throat (tonsilitic cases) are frequent, and cause much of the backwardness of pupils. This means valuable time lost to the children and a waste of public funds in their education.

School nurses reported last year over 45,000 "unfinished" cases—that is, cases which required medical and surgical treatment, but were not reported treated, and were not reached by the nurses for want of time to make the home calls. The parents of these children had failed to heed the notices of the school doctors advising them that their children suffered from some physical defect and that they be taken to the family physician or dentist, as the case might call for. These parents permitted their children to continue their broken attendance at school, suffering from physical ills, which are a decided impediment to their educational progress. Many children, bright at the time they enter school and showing excellent scholarship records in one or two grades, later begin to exhibit a disinclination to go to school, to do their work, and thus gradually drop in their class standing. These are the laggards whom timely medical care might have saved from suffering, anguish, and disgrace.

Fig. 1. Home visit by school nurse. Mother being advised on care of child requiring medical treatment.

#### THE INSUFFICIENCY OF NURSES

New York city employs 200 nurses for health work in the schools. A great part of their time is devoted to following up cases reported by the medical inspectors as requiring treatment. The staff of nurses is inadequate to the needs of the city's schools, the average number of pupils in charge of a nurse being 4,325. This is nearly three times as large a number as should properly be assigned to a nurse, considering the many duties that are imposed on her and the social conditions which add to the difficulties of the work in the more congested districts of the city.

The Committee on Medical Inspection of Schools and School Children of the American Public Health Association has recommended that a nurse have under her supervision 3,000 pupils as the maximum, "and that the number be reduced as much as possible." The report of the com-

mittee adds, "It would be better to have one nurse for each 1,500 pupils."

It is interesting to notice how several large cities compare in this respect. It will be seen from the accompanying table that the school nursing situation in American cities at the present time is very far from the ideal. These cities were not selected in any special order or to fit any plan; they merely happen to be those from which reports on this subject are available:

APPORTIONMENT OF PUPILS TO NURSES IN TEN AMERICAN CITIES

Based on reports dated variously from 1910 to 1915.

| City | School enrollment | Number of nurses | Average number pupils to nurse |
|---|---|---|---|
| New York | 925,000 | 200 | 4,325 |
| Chicago | 301,172 | 70 | 4,539 |
| Boston | 111,632 | 35 | 3,189 |
| Cleveland | 74,438 | 18 | 4,134 |
| Detroit | 61,799 | 6 | 10,299 |
| Minneapolis | 46,267 | 7 | 6,609 |
| Milwaukee | 41,167 | 4 | 10,292 |
| St. Louis[1] | 16,785 | 6 | 2,798 |
| Newark, N. J. | 67,568 | 26 | 2,598 |
| San Francisco | 32,219 | 10 | 3,222 |

[1]The system of school nursing in St. Louis includes only 19 schools in the poorer sections of the city.

Fig. 2. School nurse instructing children in the care of the teeth.

THE NURSE'S DUTIES

The nurse examines the children for contagious diseases; makes periodical examination of children ordered treated, but not excluded from school for contagious eye or skin diseases; gives instruction to children in oral hygiene, with practical demonstrations of the use of the toothbrush and tooth preparations, and in other matters of personal hygiene. She assists the medical inspector in making physical examinations, explains to the parents the nature of defects found in their children, of which they had been notified by the doctors, and advises them as to obtaining the necessary treatment. She makes home visits to ascertain whether children reported as requiring treatment are obtaining it. Where parents are unable to afford private treatment, the nurse advises them as to places where it can be obtained free. She takes children to clinics and dispensaries whenever they are unable to go alone and have no one in the family to accompany them.

In addition to her prescribed duties which she fulfills from day to day, the nurse renders assistance to the necessitous child by obtaining medicines, eyeglasses, or other requirements from charitable institutions. She meets daily opportunities which present themselves to her for the instruction of mothers in sanitation, ventilation, cleanliness, bathing, and the preparation of food, and many other incidental factors which are conducive to health.

DIFFICULTIES TO OVERCOME

Much time is necessarily lost on cases among the foreign-born population as well as among some natives, who view the authorities' interest in their children with fear and suspicion, and have strong prejudices and superstitions regarding medical, surgical, and dental treatment. These obstacles must be overcome with gentle argument, and the conviction must be impressed on the ignorant mother that what the nurse seeks to do in behalf of the child is in its best interest. It is sometimes as hard to convince a mother that a row of decaying teeth, stumps, and inflamed gums are a disfigurement to her young daughter as it is to overcome the mother's objection to eyeglasses as an impairment of a girl's "looks."

Sometimes the plea is made by parents that their employment at their trade or business will not permit them to take the child to a clinic for operation—mainly in cases of tonsils and adenoids. This is frequently a mere subterfuge to avoid having the operation performed. In these cases the nurse must offer to make all necessary arrangements for the operation and treatment, and even to accompany the child to and from the clinic. Here another struggle of wits ensues to obtain the parents' written consent, without which the work must not be done. It need hardly be said that such cases—and they are not few, by any means—consume a great part of the nurses' time.

But a large percentage of the "unfinished" cases are not in this class. On the contrary, they are those of children in better-to-do families, where intelligent mothers are merely neglectful. It is in these cases that the failure of parents to act promptly and the lack of cooperation by teachers in the follow-up work result in a social wrong.

It is important to point out that the nurses make the home calls in the afternoon after the day's work in the schools. It will thus be seen that the school nurses' time and energies in New York city are pretty well taxed.

THE NEED OF PARENT COOPERATION

Nurses must make from two to ten visits in many cases before parents are induced to secure medical attention for their children, according to the reports of the Bureau of Child Hygiene of the Health Department. The average number of visits per case made by nurses in following up is four. It can readily be seen that without the cooperation of teachers and parents, more cannot be expected of the school nurses than they are at present accomplishing. When one considers that long intervals of time must elapse between visits to individual cases while the nurse makes the rounds of her district, it becomes apparent that the health defects of some children become aggravated, with attendant diminution in their capacity for school work.

The city certainly needs more nurses. But it also needs teachers and parents who will devote more attention to the health of the children. Many more cases of physical defects could be disposed of than at present if the teachers exerted their influence on negligent parents to the end that the time of the school nurse be saved for other work. Parents would only be fulfilling their duty toward their children, as well as discharging an obligation to society, if they promptly carried out the instructions of the school doctor instead of waiting for the nurse to visit them and persuade them to do what is necessary.

### THE PART OF THE TEACHER

Teachers can render very effective service by communicating either directly or through the principal with the parents whom the nurses have had no opportunity to see. A teacher has before her the physical record card of every child in her class, and no teacher should cease attention to a case until every defect entered by the school doctor has been reported treated. No home visiting is required for this. A reminder to the child or a brief note to the parent will sometimes suffice; if not, a request be made that the parent call at the school to see the principal regarding the child's work at school. Perhaps we had better make it clear to teachers and parents alike, who may not as yet be fully abreast of the times, that the child's health is as much the school's concern as is his education. Hence the teacher's obligation to prod the parent on the child's need of eyeglasses, an operation, or dental care, as well as on his failure in "readin', 'ritin', or 'rithmetic."

This is particularly important with reference to the eye cases. Nothing will perhaps hinder a child more in its class work than poor vision. Once a child has been examined by a doctor and reported to have poor eyesight, the duty should devolve on the teacher to see that the child is examined by an oculist, and, if glasses are prescribed, that they be promptly obtained and worn by the child. A teacher who has never more than fifty pupils in her charge has a better opportunity to observe them and keep track of their needs than a school nurse has with over 4,300 pupils to look after.

Until parents and teachers offer such cooperation, a great part of the money spent for school health work is wasted. The disclosing of physical defects is but the first step. The last and most important step is having the defects cured. It is here that the parent and the teacher may complete the work of medical inspection, and not only benefit the individual child, but render a valuable service to the community.

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Mrs. Rebecca R. Williams, of Bellefontaine, Ohio, has just deeded to that city a tract of land valued at $100,000 on the condition that the land be sold and the proceeds used to erect and maintain a hospital. One-half of the money will be spent for a building with the necessary equipment, and the rest will constitute an endowment fund. The institution will be named "The Mary Rutan Hospital," in memory of Mrs. Williams' mother. It will be established and managed by a board of five directors, of which the mayor of Bellefontaine will be chairman.

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The statement in the May number of THE MODERN HOSPITAL that the recently organized Cooperative Hospital Association of Cleveland, O., would build a $30,000 hospital contained a typographical error. The building plans of the association call for a hospital to cost $300,000. The construction work will include the remodeling of an apartment house and the erection of a five-story and basement building, 146x120 feet. Dr. Henry A. Becker is at the head of the undertaking. Associated with him are Dr. Frank J. Geib, Dr. John N. Lenker, F. O. Blazier, and William Matthews.

## INTERESTING SOCIAL SERVICE MEETING

### Speaker Tells Some History of Orthopedic Work Under Pioneers Half a Century Ago

At the last meeting of the social service workers of the hospitals of New York and Brooklyn Mr. Oliver H. Bartine, superintendent of the New York Society for the Relief of the Ruptured and Crippled, gave a most interesting talk on the development of orthopedic work and the care of the ruptured and crippled. He told of the first work done solely for the ruptured and crippled under the guidance of Dr. James Knight in the year 1842. After working among the crippled poor of the city for years, he determined that an institution should be founded to relieve their suffering, realizing, as he did, how very inadequate the crippled and ruptured could be cared for in their own homes or even in the hospitals of that day. In 1862 he, with the aid of a few men of prominence and means, organized the original society that has been known from that date as the New York Society for the Relief of the Ruptured and Crippled.

He gave a complete history of the hospital up to the present date. He also told how Dr. Virgil P. Gibney, the present surgeon-in-chief, was the first to introduce modern orthopedic surgery, and had as an associate the late Dr. William T. Bull, who added to the efficiency of the hernia department by operating for radical cure. The statistics of hernia operations have grown very much, and no case of deformity or hernia need ever go unrelieved.

Anyone who believes that a special hospital cares for only its specialty is vastly mistaken. Almost from the beginning this hospital has had a full staff of consultants, as well as a regular attending staff, and at present there are experts in every branch of medicine and surgery connected with the institution, so that patients have at their disposal the leading specialists of the city. He told of their manufacturing department, their school that was started when the hospital was founded, and the excellent work done by their social service department, which is now considered one of the integral and important departments of the hospital.

As chairman of the first social service department established in the Masonic order, he told of its gratifying results; he also felt that the lesser number of mendicants upon the streets of New York city during the past few years was partially due to social service and allied agencies, and to the many discussions entering into this important problem, which has tended to bring about proper activity by the proper officials.

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### Cost of New York's Insane

According to the annual report of the State Hospital Commission, which was recently submitted to the Legislature, the state spent $6,865,385.98 for the care of its insane. The per capita cost for maintenance was $210.89, or $0.57¾ a day. This included every item outside of buildings and permanent improvements. On October 1, 1915, there were 36,664 patients under treatment in all institutions, and of these 34,308 were cared for in the civil state hospitals, 1,351 in institutions for the criminal insane, and 1,005 in licensed private institutions. The capacity of the fourteen civil hospitals at the close of the year was 27,872, thus being overcrowded by some 6,500 patients, or 23 percent. The increase in daily population over 1914 was 698 including paroles and 559 excluding paroles. There were 7,934 admissions to the state civil hospitals during the year.

# THE MODERN SANATORIUM

Conducted by ALBERT WARREN FERRIS, A.M., M.D.,
*Saratoga Springs, New York.*

Please address items of news and inquiries regarding The Modern Sanatorium to the editor of this department, Saratoga Springs, New York.

### Orientation and Questionaire

When once arrived in the sanatorium, after yielding to the advice of his physician and becoming imbued with a growing confidence in the ultimate results of treatment, and after receiving (let us hope) proper first impressions, the patient either feels a sense of relief at having taken the first step, and a growing receptiveness, or is overwhelmed with a sense of expatriation, possible permanent impairment, and general distrust.

Fig. 1. The Old Grape Vine, Glen Springs.

The assignment of the patient to his room should not be left to a clerk or an employee who has none but practical and impersonal ideas. The feeling of being stowed away even as so much baggage is not encouraging. The best psychologist on the medical staff should, without haste, with an absence of the hustle and bustle of modern approved mercantile methods, make a rapid survey of the new member of the family, his impressionability, his nervous edge, his irritability, perhaps his despondency. An apartment should be chosen with a proper outlook; for, although he will of course be led—urged, if need be—into as much of an out-of-door existence as possible, nevertheless there are many hours when the seclusion and isolation of one's bedroom are unavoidable. Hence the psychologist chooses a room from whose windows can be seen the activities of a farm yard; or the life and enjoyment of golf links; or the cool shadows of a grove; or a roadway over which forge numbers of monster automobiles, typical of irresistible power; or trim and peaceful lawns and flower beds, suggestive of repose.

Some patients will enjoy daily a study of a single feature, like the old, luxuriant grapevine which arches, like an ancient gateway, over the walk, north of the principal building at The Glen Springs at Watkins, where so frequently a pro-German cat can be seen stalking an English sparrow, who has dreamily settled on a sturdy tendril, oblivious of feline periscopes. Or, at The Glen Springs, a patient may be domiciled so that he has a wide and comprehensive view of near and distant objects, so varied that either grapevine, apple trees, cottages, pedestrians, or miles of blue lake may engage his attention and furnish suitable food for thought. Or, as at Clifton Springs, he may be so situated as to direct his gaze on symmetrical rows of maples, shading walks which lead to a bright expanse of meadow, palpitating with light.

His temporary habitat having been selected for him, and his orientation established, a consideration of his case should begin at once. A delay of half a day or a day is irksome, and suggests neglect as well as loss of time. Hence the preliminary questions should at once be propounded, and a full clinical record be elicited, covering family history, the patient's past history, his general habits as to exercise and food, stimulants, and medicines, activities of digestive and urinary tracts, and as to sleep, as well as the subjective symptoms of which he complains. This must precede the

Fig. 2. View from a north window at Glen Springs.

Fig. 3. Maples from a window at Clifton Springs.

physical examination, and be somewhat of a guide to special focal attention. The patient will state his full name, home address, name and address of a relative, and name and address of his home physician readily enough. He will give you his age, civil condition, race, and occupation, and will unhesitatingly tell you the chief complaint which brings him to see you and seek your care. But when you begin to inquire concerning his immediate family and his ancestors, he will frequently demur and somewhat resentfully claim that you are to treat him, and not his dead progenitors; and there will be a necessary explanation of ancestral tendencies and proclivities, and inheritances in general; hence the age of father, mother, brothers, and sisters, and paternal and maternal grandparents must be recorded, together with the state of health if living, or cause of death if deceased, and also age at death.

In the past history should be recorded the occurrence or nonoccurrence of the ordinary exanthemata of childhood, including measles, rötheln, hives, erythema, chickenpox, and especially scarlet fever. The history of an attack of diphtheria, chorea, tonsilitis, rheumatism, or rachitis should be elicited or denied. The same is true regarding typhoid fever, pneumonia, malaria, influenza, gonorrhea, and syphilis. Women are asked eight more questions than men, to secure the facts regarding menstruation, labors, and miscarriages, if any. Injuries and operations must each be listed, with their extent, gravity, and dates. Next are chronicled the personal habits, including brief statements regarding exercise, appetite, food, coffee, tea, milk, water (how much per day), alcoholics, tobacco, and drugs, as well as a statement regarding constipation, the use of laxatives, and the presence of hemorrhoids, with an enumeration of the occasions per day and per night on which renal secretion is voided, as well as its urgency; finally, the sleep record, how many hours, and whether restful or troubled with dreams.

The final group of facts elicited includes present or recent subjective symptoms, as follows: headache, tinnitus, vertigo, ocular symptoms, mouth symptoms, thoracic pain, cough, expectoration, dyspnea, palpitation, nausea, vomiting, abdominal pain, gas, joint symptoms, edema.

Four-page folding sheets, printed in blank, for recording the biographical and clinical facts thus outlined, should be provided for expediting work. They can conveniently be placed in large envelopes, in which correspondence and examination reports can readily be inserted, for preservation and easy access in a vertical file.

A general chronological history centering on the chief complaint is compiled from the patient's statements in answer to questions, to be studied in connection with the clinical record, as a very desirable, if not necessary, supplement.

A very early order of the physician concerns the preservation of a twenty-four-hour specimen of urine, collected as soon after admission as it can be secured, and before change of diet. Exact directions for collecting the specimen should be printed on the large label of the container, in order to secure an exact day and night total specimen.

The weight should be taken soon after admission at a recorded time of day, the patient nude or wearing a one-pound sheet. Next comes the physical examination.

ALBERT WARREN FERRIS.

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Toledo, O., is to have a hospital for blind infants if the plans of the Baby Welfare Association of that city are carried out. Mrs. R. J. Law is at the head of a committee appointed to take the matter up with various societies represented in the association membership, and Aaron Cohn is publicity chairman of the movement, the object of which is to provide proper care and treatment for infants afflicted with blindness at birth. Speaking in support of the hospital project, Miss Emma Roberts, of the District Nursing Association, recently pointed out that the sight of an infant may be saved in forty-eight hours' time and at a cost of $1.50, whereas the cost of educating a blind person is $8,000.

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Plans for the proposed new home for the Amboy Hospital, Amboy, Ill., call for a two-story and basement building, 33x64, of tile and brick veneer construction. The dining room, kitchen, and laundry will be in the basement. On the first floor, near the front entrance, will be the physicians' office and consultation room, matron's room, and reception hall. Back of these will be nurses' rooms, a ward room, and private rooms for patients. The operating room will be on the second floor, which will also have a ward room and private rooms, with a similar arrangement to those on the first floor. Seventeen to twenty beds for patients will be provided. The hospital is being erected by the Amboy Hospital Company, which took over the institution when the old building was burned last year.

# DEPARTMENT OF DIETETICS

Conducted by MISS LULU GRAVES.
*Dietitian of Lakeside Hospital, Cleveland, Ohio.*

Please address items of news and inquiries regarding Department of Dietetics to the editor of this department, Lakeside Hospital, Cleveland, Ohio.

## Wheat Flour

[Continued from May issue.]

BY J. A. WESENER, M. D., Chicago, Ill.

### GLUTEN

This is the most valuable constituent of the flour—not so much in that it is a nitrogenous substance, which furnishes assimilable nitrogen to the body, but on account of its peculiar physical property, which adapts it to the art of breadmaking. Everyone knows from his first lessons in physiological chemistry that gluten is known as a coagulable protein, which exhibits its coagulable properties when it comes in contact with water. Wheat and a few of its closely related grains, such as speltz and emmer, are the only materials which contain proteins of this kind. While there are other proteins in wheat flour, notably albumen and globulin, which do not coagulate with water, these are comparatively small in amount and relatively unimportant. The proportion of total proteins in the flour is nearly always somewhat less than in the entire wheat grain, and for this reason there is a somewhat higher proportion of protein in the bran and other byproducts, which ordinarily are used as food for animals, than in the flour. So, too, that portion of flour material which lies farthest from the bran contains the greater amount of starch and a less proportion of gluten than does that which lies near the bran. The whiter, finer grades of flour contain, therefore, more of the starch and less of the protein than do the coarser, darker grades.

I wish to emphasize the point made above that the most important property of the wheat gluten is the fact that it makes the framework of the loaf of bread. If other cereal proteids had this same property, leaven bread would be made out of all such cereals. Therefore, if corn, rice, buckwheat, and rye flours had gluten which was of the same physical property, the consumer would have a host of cereals from which to make bread.

The food value of wheat gluten, from a nitrogenous metabolism standpoint, is no better than what can be obtained from the other known coagulable cereal proteids. In this connection, if one seeks to produce a bread highest in nitrogenous elements, he would be obliged to use the lower grades of flour or add higher protein substances to the flour before turning it into bread. Of course, it must be borne in mind, everything else remaining equal in the manufacture of flour, that the ratio of color value in a flour decreases inversely with the increased protein matter. As already stated, the bran, which is the outer portion of the wheat kernel, is the richest in protein substance, but these proteids are not of a gluten nature, and therefore do not coagulate with water. As an article of food, they are inferior to the proteids of the flour because they are incased in woody fiber, from which they are not removed in the alimentary tract, and therefore, to a large extent, are lost to the body.

GLUTEN OF FLOUR.—This is a very important factor from a baking standpoint. Just because a flour should happen to be high in gluten content is no proof that it will make a large loaf of bread. We have seen many types of flour that were high in gluten which was very soft and stringy, and therefore did not have enough resisting properties to hold the entangled gas developed by the yeast. Many times we have seen flours where a 10 percent gluten content made a larger loaf of bread than could be made from a flour running 12 percent in gluten. A simple illustration would be like comparing two equal weights of vulcanized rubber, one stretching considerably more than the other before breaking. During the present season much of the wheat has been affected by germinating during and immediately after harvest, which has resulted in so changing the gluten as to destroy the properties which it ordinarily possesses when the wheat is properly ripened without germination. This condition often results in a doughy bread, and, unless proper care is used in making the loaf, it has a tendency to fall in the oven and lose considerable of its volume.[1] On the other hand, we have seen flours that are not only high in gluten, but in which case the gluten was of a very tough and harsh nature. When such flours were subjected to the ordinary bread methods, a poor loaf was obtained. Had the flour been treated in keeping with the quality of the gluten, a large and very satisfactory loaf of bread would have been produced. Such flours require more water and a slight increase in the period of fermentation, or a slight increase in the amount of yeast. The two factors involved are water and a longer enzymic action of the yeast on the gluten. These two elements will soften the gluten so as to prepare it for the maximum expansion under the influence of the gas produced in the dough.

[To be continued.]

## Practical Dietetics

BY H. D'ARCY POWER, M. D.,
Dean San Francisco Polyclinic and Post-Graduate School, San Francisco.

In accepting the proposal of THE MODERN HOSPITAL to write a paper on practical dietetics, I realized that I was undertaking what might easily be either a hopeless or futile task. The subject is so much larger than can be adequately covered by a single essay, and generalities are so apt to fail of individual application, that a successful attempt seems quite problematical. Nevertheless, I am about to offer a few suggestions along the line of the general principles involved that are often overlooked, and a restatement of which may be at least serviceable to some of my colleagues.

Practical dietetics may be considered under three headings—qualitative, quantitative, and environmental. What should we eat, how much should we eat, and under what conditions should we eat? Let us consider these seriatim. First, in regard to the quality of food, it ought to be recognized that, in the very nature of things, there is no fundamental reason why any form of organic matter should be absolutely excluded from consideration as a food source. If we look at the digestive activities of the animal world, we shall find that, while the cells and tissues of ani-

[1] In a later article we will give a method of how to produce an excellent loaf of bread.

mals different from ourselves are often histologically identical and physiologically indistinguishable, they are able nevertheless to deal with substances as food that never enter into our scheme of diet. When we consider the daily dietary of a barnyard fowl or a pig, we see that neither coarseness of structure, hardness of texture, presence or absence of bacteria have any necessary effect on a good digestion. Even when we deal with substances that are toxic to man, we find that other creatures are able to utilize them with impunity. The rabbit can make a dinner of belladonna leaves, and there are beetles that can grow fat on strychnine; even man himself, under conditions established by climate and habit, is able to live healthily on dietaries that are quite outside the range of our daily habits. The Eskimo is, as far as I am aware, not particularly the sufferer from living largely on whale blubber, nor have we any special reason to think that the dwellers in tropical climates, living on very coarse forms of vegetable character, are more subject to digestive difficulties than ourselves. We ought, therefore, to look on no form of organic matter as necessarily excluded from consideration as a foodstuff, and a general consideration of the whole subject from the physiological standpoint seems to indicate that failures in digestion are more frequently the result of failure in the secretion of the digestive fluids than in the inherent indigestibility of the substances used. This is a very important consideration, if true, because it condemns as unscientific any fixed formulation of foods as included in or excluded from general use, and it removes the onus for digestive failures to the patient and the physician in the nonadaptation of the organism to the work to be done. That this is so in actual practice is abundantly shown by Pavlow in his experimental work, wherein he demonstrated that changes in dietary were always followed later, in healthy individuals, by a change in digestive secretions, bringing them into relation with the altered conditions; thus, dogs fed largely on carbohydrates and then transferred to a purely proteid diet, soon produced the necessary proteolytic ferments; or, under reversed conditions, an increase of amylopsin with a decrease of trypsin. We will, therefore, take as our first problem that of determining the nature of food to be given. We shall first consider the habits of the individual and the possibility of bringing him into relation to his food rather than bringing the food into relation to him. This is often of great importance to us in a country such as the United States, with people coming from many parts of the world and having very different food habits. It is no uncommon experience to find that an ideal dietary based on our experience with Anglo-Saxons and given to a Mexican or southern Italian hopelessly fails, owing to the different habits and digestive possibilities that their past has engendered. It is the belief of the writer that, if time and care be used, a relatively normal organism may adapt itself to a very large range of foods, including therein many that have a bad reputation, and which, at a given period of their history, might be quite unusable. It is within the writer's experience that certain vegetables, such as onions and the cabbage family, which, in particular individuals invariably produce gastrointestinal distress, can, by adaptation, later be used and enjoyed without harm. It is not so clear that in those already afflicted with disease any such adaptation is possible, or the effort desirable.

We will now leave the subject of the nature of food, and turn to a few of the conditions under which food is eaten. Experience of hospitals, sanatoriums, and the recommendations of physicians to their patients in private practice leads to the suspicion that one of the causes of digestive failure is an insufficient regard to the need of accompanying the ingestion of food with a proper appetite. It is no uncommon thing to offer the sick articles of diet that, however digestible and nutrient in themselves, are absolutely incapable of arousing any desire on the part of the patient to ingest them. An individual who, for most of his days, has lived on the products of French, Italian, or Spanish cooking, and is then offered milk soup, wishy-washy rice pudding, and vegetables without salt or seasoning, is not likely to have that avid desire which should accompany all intaking of food, because we have sufficient proof that the first secretion of the gastric juice, and in fact even the production of the sufficiency of saliva, is dependent on an active psychic impression. If these necessary secretions, the saliva and the so-called appetite juice, be not produced, the secondary stages of digestion will almost certainly fail in proper development. The man who hopes to succeed in gastrointestinal alimentation will carefully inquire into the likes and dislikes of his patient, and in setting out his dietary give due attention to this very important factor.

Taking next in order the question of mastication, it is hardly necessary to restate what is an every-day experience—constant failure of digestion in the United States, and to a lesser extent elsewhere, from insufficient mastication. It is not, perhaps, so entirely because the food needs minute trituration, as that in the mixed dietary of man each of the food elements requires a proper adjustment of the secretions, and that in the case of starchy foods the need of insalivation, which can only occur with careful mastication, is an all important step, and that also a proper interpenetration of meat fiber, toughened and hardened as it is by some of our commonest methods of cooking, no less requires disintegration before it can be made accessible to the hydrochloric acid and pepsin of the stomach. We might also consider from this standpoint another reason why mastication should be thoroughly performed—namely, to permit of the proper segregation of the food in the stomach. It will be recollected that Cannon, in his experiments with cats, demonstrated that food taken into the stomach is not indefinitely mixed with gastric secretions, but is deposited layer upon layer and submitted through the influence of movement to digestion in small masses in the antral end. A rapid ingestion of food mixed with large quantities of fluid very readily makes this impossible, and gives the condition which we so frequently see in the x-ray plate where the bismuth meal, taken at one gulp, shows nothing of this arrangement; yet it is on the occurrence of some such segregation that the continued digestion of starch in the stomach is dependent. We might at this point consider, in cases where digestion is already injured or proper mastication is impossible, to what extent the lack of these elements can be compensated. I would draw your attention to the utility of acids and alkalis in the process of cooking, the first leading to disintegration of connective tissue and the second to the breaking down of cellulose. If we consider the use in German cooking of acids, we may find therein an explanation of the ability of the Teutonic stomach to deal with foods that would very commonly lead to disease if otherwise cooked. It is a fact that in past times a great deal of the meat used in central Europe was of poor quality, tough, and of inferior flavor. The type of cooking which by the addition of spices gave the necessary appetite juice, and by the use of acids led to better solution of the fibrous coverings of the digestible proteins of such meat, has a physiological explanation and gives us a hint for practical use in modern dietaries. So also the very common use in some parts of Europe of small quantities

of sodium bicarbonate or carbonate in the water wherein vegetables are boiled has a very distinct value in rendering the starch contained in these foods more readily accessible to the ptyalin and amylopsin of the salivary glands and pancreas. If, then, we have succeeded in evoking a good appetite, of prolonging the mastication of food to allow of insalivation and segregation, and have so prepared our foods that, in the case of subnormal digestion, they are sufficiently amenable to the gastrointestinal secretions, there still remains the problem of carrying them through the parts of the intestine devoted to absorption and assimilation in a reasonable time. In other words, we must face the common condition of so-called intestinal stasis and secondary autointoxication. It is a somewhat prevalent belief among medical men, and almost universal among the laity, that the symptoms of autointoxication are due to absorption of food-engendered poisons in the large intestine. It is the contention of the writer that this is more than doubtful. Cases are not at all uncommon of patients evacuating their bowels once a week and having no toxic symptoms. A man died some years ago, whose case was reported in the *Journal of the American Medical Association*, who passed through two periods, one of some ten months and the second of nearly a year, without an evacuation of the bowel. At the end of the second period he died with an accumulation of some forty pounds of feces in the colon, and it is not recorded that he suffered throughout this period with any intense intoxication. When we compare the results of twist of the ilium with the twist of the sigmoid, we find that the first is followed by immediate symptoms of poisoning and the latter none for possibly many days. Why? Because, in my opinion, all gastrointestinal intoxication is dependent on the absorption of poisons from the mucosa of the small intestine, and not in any way from that of the large. So long as the food can traverse the small intestine in the usual period—namely, about three hours—and pass without secondary regurgitation into the colon, autointoxication never occurs. The ill effects of the colonic stasis I believe to be due solely to the secondary obstruction that they cause to the proper emptying of the ilium, and therefore I believe that the man dealing practically with such cases will see to it, not so much that the colon is constantly empty as that the passage through the ilium is effectively secured. What does this mean in the matter of dietetics? It means that the food in such cases should be of such a character as to afford the least chance for retention in the long journey through the small bowel. But food consisting largely of stringy cellulose, such as many of the tuberous vegetables—carrots, turnips, kale—should be excluded on account of their mechanical possibilities; that in the use of aperients or laxatives the small bowel rather than the large bowel should be considered, and that drugs, such as phenolphthalein and senna, are more useful than aloin or other colonic stimulants. It is within the writer's experience that in cases where marked toxic symptoms, headache, etc., were present, the administration of a small intestine stimulant relieved these long before an actual evacuation occurred, the belief being that, as soon as the peccant material passed the ileocecal valve, the toxic absorption ceased. The whole subject is worthy of more careful study than has so far been given it, but we shall not be doing wrongly, whatever may be the final outcome, in following the line here suggested of cutting out mechanical obstruction and stimulating peristalsis.

We shall now pass to the subject of quantitative feeding. We are at the present time in a period of changing standards. A little while ago the books on dietetics were ringing with the call for a careful consideration of the calorie values of foods and the prescribing of dietaries on the basis of the supposed heat requirements of the patient. At that time it seemed to be enough to determine what the patient needed in the way of fuel, and then, so long as that fuel contained the minimum quantity of nitrogen, to prescribe it on its heat-producing basis alone. But a number of doubts have crept in; first of all, what is the minimum calorie requirement? Lusk, Johansson, Tigerstedt, all agree in placing the lowest possible calorie intake, under conditions of complete rest in bed, at somewhere about two thousand calories for a person of normal stature and weight. It would, therefore, appear as if anyone engaged in ordinary work taking a lesser amount than this must inevitably waste. Now, whatever may be the case in men of normal health and habit placed under experimental conditions, and these have been the usual data on which calorie demands have been formulated, it certainly is not true of abnormal people accustomed to a different basis of living. I have been long convinced that there are many people doing a fair, if not a full, amount of work whose heat expenditure, and therefore calorie requirements, do not come up to this standard. I believe that careful inquiry into the actual food intake of many patients leading lives of low activity will show that they are frequently not losing weight on a basis of at least 20 percent lower than this, and I suggest to the readers that they make this the subject of personal investigation and report, as I am much more inclined to trust the sum of a number of investigations over all kinds of people than the findings of a few laboratory investigations, however carefully conducted. Again, the work done in many fields during the last ten, and especially five, years shows that, even when calorie requirements are fully met, the material offered to the body as food, even though it comply with the nitrogen demands as well as those of carbon and hydrogen, does not necessarily give us the full quota of food material. Not only is there a difference in the absorption of the products of fat and carbohydrate digestion, but still more so with the proteins. So long as it was believed that protein foods, on peptonization, became immediately available for cell food, and that in the same unknown way the cell received these animal proteins and chemically changed them into those of the human economy, it was possible to believe that the task of dieting was sufficiently fulfilled by giving the minimum protein requirement. True it is, that this was by no means settled, Chittenden and his school believing that 50 grams or thereabout was a possible normal minimum, and the older observers on the common habits of mankind placed the protein demands at from 100 to 120 grams per diem. Today we not only consider the quantity of nitrogenous material, but also its nature. We know that the dissolution of the protein in the gastrointestinal tract breaks it up into small molecules, the so-called building stones of the larger protein complexes; and that, as each animal or vegetable requires for its substratum a definite form of protein matter, so it is necessary that the building stones —that is, amino acids capable of being formed into these substances—should exist in sufficient quantity in the food. The practical importance of this is to make it evident that the attempt to feed, even with a full quantity, with one particular nitrogenous substance may readily lead to starvation if it be lacking in the particular building stones necessary to form human proteins. As a problem of practical dietetics, we at the present time, not yet knowing the exact molecular contents of each given food protein, nor indeed the exact amino acids needful for the total use of the body, can make proper provision only by insisting on a sufficient variety of protein foods in the assurance

that among them the total requirements will be met. This doubtless leads to much waste, which a better knowledge may in course of time eliminate, but it is the only road which we can safely travel at present.

There are three common conditions which we have to meet in quantitative dieting—that of the normal individual who wishes to remain normal, and here a dietary based on the average experience, the particulars of which I will give later, should suffice; secondly, the requirements of those who habitually carry a weight too great or too little for their stature—the undernourished and the obese. It is a common experience that fat, or the lack thereof, is not particularly related to the food habits of the individual. Extremely thin people are often great eaters. A lady weighing 250 pounds may often eat very much less than the one with a weight of 100. It is obviously not a question of feeding or starving, but rather of what is done with the food that is taken into the body. The ultimate end of all intake is either storage or oxidation, and storage itself is dependent on whether oxidation does or does not take place. If this be so, the problem really becomes one of why do certain individuals enjoy an excessive and others a subnormal oxidation. As this is a particularly common and important phase of our daily practice, it will be well to look carefully into it. The proteins, carbohydrates, and fats stand in very different relations to oxidation, and in the daily course of assimilation and excretion differ in the order of their treatment. Proteins, for example, are almost incapable of storage. Only when the body, under stimulation, is developing new cellular areas, and particularly muscle cells, is there a real storage of protein. At all other times the daily intake, whether it be small or large, must be promptly oxidized under pain of causing intoxication, in which case it is equally rejected from the body, for a surplusage of meat unoxidized is likely to produce either vomiting or diarrhea, but not storage. If, therefore, protein is given in excess along with carbohydrates and fats, it will make the first claim on the oxidation powers, relegating the others to a secondary place. Carbohydrates have the next choice; but, if they be in excess or are deprived of their proper share of oxygen by excess of protein, they may either be stored to a limited extent as glycogen or be transformed into and stored as fats. Lastly, fat is the most refractory of all the foods to oxidize, and in some people, even when the daily intake of food is below that usually necessary to maintain health, the oxidation of the fats will fail and the fat be stored. This order of preference is extremely important in practice, because it teaches us that, if we would insure a minimum condition of storage, we must use a minimum quantity of fats and the maximum amount of protein as the basis of our dietary. It will next be pertinent to ask by what means is this oxidation brought about, and the general answer of physiologists today is that the final transformation of foods into their end products is dependent on the intermediate action of ferments, known as oxidases; and that, so far as the great mass of this final oxidation is concerned, the cells where this chiefly occurs are those devoted to heat production—namely, the muscle cells. Whether the muscle cells themselves are responsible for these oxidases or whether they play a secondary role under the influence of substances, such as those of the thyroid and other glands, has yet to be definitely shown; but this much is certain—no effective oxidation can occur unless both the thyroid gland be active and the muscle cells sufficiently numerous to deal with the products of digestion that are constantly distributed throughout the body. All this is physiological commonplace, and I would not introduce it here but that I feel that the influence and importance of the musculature as a regulator of weight is not appreciated in the way it should be. Obviously, if the greater part of the heat production which is finally dependent on how much matter is burned occur predominantly in muscles, it can only so occur provided there be a sufficient musculature to effect it; and, therefore, if an individual eat to an abnormal extent and have not a musculature sufficiently extensive to burn the products of his digestion, he must inevitably accumulate the excess. Equally, one with a large musculature, even if he eat abnormally, is likely to make away with his excess without danger of storage. Now, there is here to be remembered a third factor—namely, that muscle cells cannot be maintained in health or stimulated to grow by the mere presentation of food; that, without the stimulus of muscular exercise, muscles will inevitably diminish both in functional and reproductive activity, and the tendency to oxidative failure and fat accumulation inevitably ensue. It is well to remember in this connection the experimental work of Zumpf, who showed that the metabolism of a fasting man was increased by 250 percent on the days that he exercised. To bring these theoretical considerations into relation with the too common problems of our daily practice—how to diminish the weight of A and increase the weight of B—we would say that, in the matter of weight reduction, the first problem is to give as little as possible of nonoxidizing foods, to make the main food substance protein, with a certain amount of carbohydrate, and as near as possible a complete exclusion of fat; to remember that, if food is given in lesser quantity than it is consumed, there must of necessity be a reduction of weight, seeing that oxidation never ceases in the living body and that experimental work in various fields has shown that we may safely make the body take one-third of its daily calorie requirements from its own resources; and, thirdly, that quite as important as controlling the nature and quantity of food is the attempt to better the oxidative processes, and that, while these may be stimulated in many cases by the administration of thyroid, yet a much more satisfactory way is the growth and activity of muscle substance, and that a system of dietetics for the obese will not give permanent results unless it is based on exercises as well as food limitation. The ideal method of dealing with obesity is to give a subject subnormal diet, with abundant muscular work in a cold atmosphere, always remembering that loss of water that is not accompanied by physical work is quite valueless, as such loss is not the product of metabolism. It is well, however, to caution here the average patient that exercise without following the food restriction is equally useless.

If these be the principles underlying the treatment of obesity, it would appear as if the reverse measures would necessarily be demanded in dealing with the undernourished. I think that the experience with most of us who have dealt with this class of cases is that it is much more difficult to compel a patient to put on flesh than it is to reduce. It is an absurdity to say that a patient cannot be reduced in weight; it is too often an impossibility to insure an increase, the reason being that we have no definite control over the production of the oxidases that are the final arbiters in this matter; but inaction will lead to muscular failure, and the ingestion of the difficultly oxidized fats will make for at least an increase in weight. In parts of northern Africa, where beauty is weighed, the bride, to make sure of the affections of the future husband, whom she does not see before marriage, is treated on this basis. She is kept in bed for three months on an excess dietary consisting in greater part of oil and honey. The

procedure is certainly scientific, and is said to be very successful. It may not be capable of exact application to the conditions of American life, but it bears within itself the principles on which our treatment of the undernourished should rest.

Finally, in the matter of quantitative dieting comes the very practical question how we are to bring it within the limitations of the average home. Within the last few years a number of attempts have been made to prescribe food quantitatively, in some such simple manner as can be applied to the average household as well as to the large institutions.

I need not go into details in regard to these methods —they have been given elsewhere; but I will refer again to my publication of the plan followed by myself since 1908, which was first given to the profession in a paper read before the State Medical Society of California in October, 1910 (California State Journal of Medicine, December, 1910). I have used this now for something like nine years with perfect satisfaction, rarely failing to have it fully understood and easily carried out by patients of often less than average intelligence. It is dependent on first determining the calorie requirements of the individual on the basis of his height. The average patient may be very much too fat or very much too lean, in which case, if his calorie requirements be fixed by his weight, he will be either over- or underfed. The heat loss of the body is really determined by skin area, and the skin area corresponds to the height of a patient much more closely than it corresponds to weight. This led me to seek a formula which should easily and with reasonable accuracy give the calorie requirements on a statuary basis. I will not here repeat the grounds for my determination, but will simply state that if 2,000 calories be allowed for a height of 5 feet and 100 calories be allowed for every inch over this measurement, or 40 calories be deducted for every inch under it, we shall have a rapid and quite workable basis for determining the calorie requirements per diem. If the patient is in bed, 25 percent is deducted from the total quantity; if he be engaged at very severe work, 25 percent is added thereto. This formula is reasonably accurate for all ages from 1 year upward. Having thus the calorie requirements of the individual, we next determine the actual food to be used in the course of the day on a basis of the average value of the usual helping of foods having nutritive values. It is rather a curious fact that, within reasonable limits, the amounts of different kinds of foods taken by people or served in restaurants and families give as their calorie value a fairly common approximation, which may be taken as about 160 calories. For example, two pats of butter, or two slices of bread, or a couple of eggs, or a full plate of tapioca pudding, or a helping of stewed apricots with sugar, or a couple of rashers of bacon, or a large glass of milk, will all come within a few calories of this figure, and where, as in some cases, they fall quite a little below it, some other article, such as the usual helping of meat at the meal, will figure above to an extent that will make a dietary containing the usual foods even up; so that if we wish to prescribe for John Doe, whose height is 5 feet 7, we know at once that his calorie requirements will be 2,700 calories; and this, divided by 160, will give seventeen food helpings a day. These can be distributed according to the desires of the patient or his physician. This has given excellent results in practice, and is employed not only by myself, but by very many of my colleagues.

The following card of directions is in use in my own practice and at the San Francisco Polyclinic Medical Service with satisfactory results:

QUANTITATIVE DIET CHART

| Cooked food | Per ounce | Calorie value per average meal portion | |
|---|---|---|---|
| Olive oil | 200 | ½ oz. | 100 |
| Butter | 200 | ¾ oz. | 150 |
| Bacon } Ham } | 150 | 1 oz. | 150 |
| Sugar | 120 | 1 oz. | 120 |
| Crackers | 110 | 2 oz. | 220 |
| Cake | 110 | 2 oz. | 220 |
| Cheese | 110 | 1 oz. | 120 |
| Meats | 90 | 3 oz. | 270 |
| Toast | 90 | 2 oz. | 180 |
| Dates or figs | 90 | 1 oz. | 90 |
| Bread | 80 | 2 oz. | 160 |
| Eggs | 80 | 2 oz. | 160 |
| Stewed dried fruit | 80 | 2 oz. | 160 |
| Sardines | 80 | 2 oz. | 160 |
| Pies and puddings | 50 | 4 oz. | 200 |
| Poultry and game | 50 | 4 oz. | 200 |
| Cream | 50 | 1 oz. | 50 |
| Potatoes | 30 | 1 large | 120 |
| Beans | 30 | 2 oz. | 60 |
| Rice | 30 | 4 oz. | 120 |
| Green peas | 30 | 4 oz. | 120 |
| Hominy, macaroni, noodles | 30 | 4 oz. | 120 |
| White fish and shell fish | 25 | 4 oz. | 100 |
| Milk or cocoa | 20 | 8 oz. | 160 |

Note the average ounce value is 80 calories.

Note the average portion value is 160 calories.

Plain soups, green vegetables, and fresh fruits have flavoring and chemical properties, but so little nutritive value that their presence in a dietary need not be considered.

DIRECTIONS

Ascertain the patient's height. For 5 feet allow 2,000 and 100 for every inch over. If below 5 feet, deduct 40 for each inch short; the result is the calorie requirement for twenty-four hours' ordinary work. If the patient is confined to bed, deduct 25 percent; if engaged in hard work, add 25 percent.

To prescribe the proper amount of food divide the required number of calories by 160; the quotient is the number of meal portions (i. e., is the average quantity of each article of food as usually served at a meal) which must be chosen from the accompanying table.

Example—A. M.; height, 5 feet 6 inches = 2,600 calories per day.

$\frac{2600}{160}$ = 16 meal portions a day, which may be divided between:

| Breakfast | | Dinner | | Supper | |
|---|---|---|---|---|---|
| Ham | 160 | Meat | 270 | Eggs | 160 |
| Bread | 160 | Peas | 120 | Toast | 160 |
| Butter | 150 | Potatoes | 120 | Butter | 150 |
| Stewed fruit | 160 | Butter | 150 | Stewed fruit | 160 |
| Cocoa | 160 | Bread | 160 | Milk | 160 |
| | 790 | Pudding | 200 | | 790 |
| | | | 1020 | | = 2600 |

DIRECTIONS FOR DIET

Eat slowly, and never swallow coarse food until it is chewed sott. Never swallow much without masticating it and mixing it with the saliva. Avoid very hot and very cold drinks. Do not do heavy exercise after eating.

YOU MAY EAT

Bread one day old—toast.
Crackers, zwieback.
Dry breakfast foods.
Soft-boiled, poached or scrambled eggs—omeletted (plain).
Macaroni, spaghetti, or other Italian pastes, with tomatoes or a little grated cheese.
Boiled rice.
Plain soups.
Most white fish.
Plain roast or boiled beef, mutton, veal, chicken, turkey, game (no stuffing).
Asparagus, spinach, summer squash, string beans, green peas, boiled celery, kale.
Stewed peaches, plums, apricots, apples, pears, blackberries if seedless.
Milk puddings, tapioca, rice, bread, cornstarch, jellies, custard.
Cocoa, weak black tea, aerated waters.

DOUBTFUL—NOT MUCH AT ONE TIME

Mushes.
Sweet cakes.
Fried eggs.
Ham, bacon. If taken, they are better broiled to a crisp.
Sardines.
Herrings.
Oysters.
Pork, duck.
Cheese.
Tomatoes, beets, potatoes, carrots, parsnips, egg and oyster plants, mushrooms.
Strawberries, raspberries, pineapple, bananas.
Dumplings.
Nuts, never unless carefully masticated.

| YOU MUST NOT EAT | |
|---|---|
| Hot cakes, pancakes, muffins. | Onions, cabbage, turnips, cauliflower, beans, corn. |
| Fruit cake. | Salads. |
| Hard boiled eggs. | Oranges, lemons. |
| Rich soups, chowder. | Melons. |
| Salmon, lobster, crabs, shrimps, smoked and salted fish. | Pastry made of puff paste. |
| Hashes, sausage. | Christmas pudding. |
| Fried and recooked meats. | Mince pie. |
| Corn beef or other cured meats. | Coffee, strong tea. |
| | Tobacco. |

We have dealt with qualitative and quantitative factors, and there remains but a word for me to say in regard to what I believe is also important—namely, environmental. Much has been brought out in the course of recent years in regard to the control of the digestive apparatus through the nervous system—not, perhaps, its normal function, in which nerve action is quite secondary to harmonic control, but to abnormal conditions whereby various glandular secretions, directly or indirectly concerned in digestion, may be inhibited or augmented, and also whereby muscular spasm in various parts in the gastrointestinal tract may be induced, or, in extreme cases, normal tonus lowered. Some of these are matters of daily experience—the fact that a quarrel at the dinner table may lead to arrested digestion, that pleasant or unpleasant news affect the appetite, are all familiar enough as incidents. But the application of the underlying principle through the regulation of the daily habits of our patients is not always given sufficient attention. Why is it that in the United States, with a dietary that, in many instances, is superior in quality to that generally used on the continent of Europe, we have such an excessive amount of digestive disturbance? How is it that the Frenchman and the Italian can sit down to a dinner that, if indulged in by the average American, will frequently be followed by acute dyspepsia, and this, year in and year out. Is it not to a great extent in the eating habits of the nations, in which the chief meal of the day—in France, for example, the evening meal—is not a mere task to be hurried through for the purpose of assuaging a physical need, but is accompanied by social fellowship, relaxation from the cares of the day, and general pleasant surroundings, in which the time element, to which I have already referred as important, receives proper care; and, though the quantity of food taken may be much in excess of what might be consumed in an American meal, yet it is taken in small quantities at a time and interrupted by a free flow of conversation, generally on pleasant subjects, with mastication well performed because the food is enjoyed for its own sake and not bolted. It is impossible not to believe that such a delicately adjusted mechanism as that of the gastrointestinal tract and secreting glands is not profoundly influenced by the conditions under which it is exercised; and he who would successfully deal with much of the digestive and nutritional disturbances common to American life must give proper attention to this side of practice, and teach not merely food selection and quantitative feeding, but also prescribe the conditions under which the patient lives in so far as it is within our ability to control them.

Lastly, in concluding these obiter dicta, which I realize are fragmentary and not always sequential, I would make a strong plea for going slowly in arbitrary dietaries and in positive conclusions, remembering that the history of dietetics up to the present time has not been a very satisfying one to the student of medical progress; that the field of practice has been strewn with relics of discarded theories; that we have indulged as a profession in an abundance of advice, on various slender bases, and that much of what was dogmatically insisted on a few years ago has had to take a back seat in the light of a larger knowledge. It is not so long past when we found the average practitioner inveighing against soups, which were supposed to be useless and even harmful. Today we know that meat extractives may take the place of the appetite juice as a stimulant of the gastric hormone. We were equally confident that gelatin was not a food because Liebig had found dogs fed on gelatin dying of starvation. Today we know that gelatin is a very valuable food, though not a means of alone sustaining the life of the body. We were very emphatic in warning against drinking at meals, imagining, if you please, at that time that the stomach was a sack into which all things were promiscuously thrown. Today we know that fluid may be taken with meals to advantage, and does not mix with the mass of a solid meal, and so on. The fact is, in all these points the common practice of mankind has given a better clue to correct eating than the hasty conclusions from incomplete laboratory experiments, and so, when we find habits established by centuries of usage or the practice of extensive areas of the earth's surface, it behooves us to go very carefully and withhold judgment until the ground is more definitely fixed than physiological science enables us to say at present.

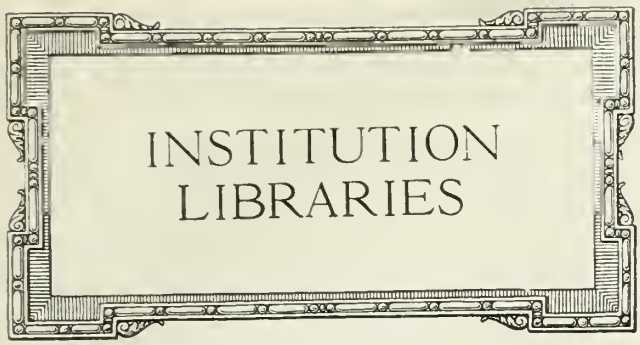
### The High Cost of Drugs

In a recent paper read by Robert P. Fischelis, Phar. D., before the Philadelphia County Medical Society, the increases in the price of drugs, due to the war, were given, and, although we have been reading newspaper accounts of drug prices having mounted to several thousand percent, Mr. Fischelis' figures rather tend to modify the exaggerated statements, only one one-thousandth percent increase being noted—viz., that of atropin. Some of the increases are as follows, and hospital buyers ought to be advised of these increases because there is no doubt that some wholesale houses have been taking advantage of the war scarce to obtain larger than a fair profit:

| | Percent |
|---|---|
| Granulated opium has increased | 58 |
| Morphin has increased | 16 |
| Codein has increased | 10 |
| Cinchona has increased | 40 |
| Quinin has increased | 180 |
| Coca has increased | 20 |
| Cocain hydrochlorid has increased | 45 |
| Nux vomica has increased | 33 |
| Strychnin has increased | 67 |
| Aconite has increased | 59 |
| Belladonna has increased | 350 |
| Atropin has increased | 1,000 |

The Hamilton Hospital, Hamilton, Mont., has found it necessary to increase its capacity and has leased outside quarters for its nurses, thus providing additional space for patients. The Hamilton Hospital, a community institution, was established four years ago in quite a small way, but it has enjoyed a substantial growth. The hospital has been self-supporting, and at the end of its fourth year the directors find that after all debts have been paid they have over $500 left in the treasury.

By the will of the late Mrs. Electa Friday, of Everett, Wash., the Everett Hospital, which was owned by Mrs. Friday, is bequeathed to her half-sister, Miss Julia Gould, of Hartford, Wis. The institution will hereafter be known as the Electa Friday Memorial Hospital, and Miss Gould has announced that she plans to erect a new home for the hospital proper and use the old building for isolation purposes. The present capacity of the Everett Hospital is understood to be about 50 beds.




Conducted by E. KATHLEEN JONES.
*Librorion McLeon Hospital. Woverly, Moss.; member Institutionol Librories Committee. American Library Associotion*

**Please address items of news and inquiries regarding Institution Libraries to the editor of this department, McLean Hospital, Waverly, Mass.**

### Institution Libraries League

In organizing this league, which was started last fall with about thirty members, it has been thought best to change the name to the Association of Hospital Librarians, because only those interested in hospitals responded to the invitation to join. The term hospital, however, includes general hospitals and those for nervous and mental diseases, schools for the feeble-minded, and hospitals and homes for crippled children, and also medical as well as general libraries. The object of this association is to promote the interests of libraries in hospitals and similar institutions throughout the United States and Canada, and for the mutual assistance of those engaged in the administration of these institutions. The constitution and by-laws of this association, together with the list of officers and members, will be published in a future issue of this journal. All persons interested in this association will please communicate with its secretary, whose name and address are given at the head of this department.

### Book Reviews

There are several very good books to be reviewed this month. Booth Tarkington's "Seventeen" is the story of a love-sick seventeen-year-old boy and his long-suffering family and neighbors. Olive Prouty has written a sequel to "Bobby, General Manager," entitled "The Fifth Wheel," in which some of the incidents of the first book are recounted from Ruth's point of view, and the story is carried on by Ruth. Amy McLaren has published a pleasant little Scotch story called "The Heir of Duncarron." P. G. Wodehouse has given us "Uneasy Money," an international romance. Two detective stories are Carolyn Wells' "Curved Blades," and "The Ocean Sleuth," by Drake.

"Cam Clarke," by John Walsh, is the delightful tale of a year in the life of a mushroom western town, and incidentally of Cam, his mother, and his friends. Mrs. Porter has written another cheerful story of a wonderful boy in "Just David," and Mrs. Sterrett's "Mary Rose of Mifflin" tells of the doings of a friendly child. "Some Elderly People and Their Young Friends," by S. Macnaughtan, is a story of the rising and the risen generations told with considerable quiet humor.

Here are two novels much above the average—Justus Miles Forman's "Twin Sisters," a study in heredity and environment which holds the reader's attention from beginning to end and is not too psychological, and "The Rudder," by Mrs. Watts, which contains some very clever characterization and some very lovable people.

"The First Hundred Thousand," by Ian Hay (Captain Beith), tells, with all the author's characteristic mingling of humor and pathos, of the training of Kitchener's first army from raw recruit to soldier under fire in the trenches, and makes us know these men and their officers personally. It is a book one cannot leave until it is finished. Colonel Roosevelt's "Fear God and Take Your Own Part" and his "A Book-Lover's Holidays in the Open" are two books which his admirers will want to read; also Washburn's sketch of the Colonel, entitled "Theodore Roosevelt: the Logic of His Career." The reader with a mechanical bent will like Bishop's "Story of the Submarine."

"Our Miss York," by E. B. Morris, is an interesting story, good reading and wholesome, as is also Alice Duer Miller's southern romance, "Come Out of the Kitchen." Middle-westerners especially will enjoy "God's Puppets," by William Allen White, and "Old Judge Priest," by Irving Cobb, both collections of short stories.

Rather more ambitious, and on the order of novels rather than stories, are "The Seed of the Righteous." by Juliet Wilbur Tompkins, and "Under the Country Sky," by Grace Richmond, both thoroughly readable and full of "nice" people, the sort one likes to know.

### A Novel Use of the Bright-Colored Fiction "Wrappers"

Although handicraft work does not belong, strictly speaking, to the library, yet the library does seem to supplement all other departments. We have been asked to tell our readers about the beads made by the patients in some of the Massachusetts hospitals from fancy fiction "wrappers" and other bright-colored pictures. These are really very charming when made well, and are perfectly easy to do. Strung as bead portieres, window or lamp shades, they look exactly like the best and most expensive Egyptian or Florentine beads.

Cut the paper in perfect triangles of from ½-inch to 1½-inch bases, the perpendicular as long as your picture allows. Round the apex into a very slightly convex curve. Roll these triangles, beginning with the base, on toothpicks or stiff twine, being careful to roll them evenly; paste the tip down on the rolled bead. Dip the beads, still on their toothpicks or string, into colorless shellac and hang them up to dry. When perfectly dry, pull out the string. A little experimenting will show how to cut so as to give good color effects and to give different shapes and sizes to the beads. Long, thin beads need a base of an inch or more; short, fat ones a shorter base and longer perpendicular. Many patients like to make these beads when they are unable to do work which requires more concentration.

### Notes of the Libraries

The medical library of the Cincinnati General Hospital reports 20,101 volumes and 3,277 pamphlets that are free for reference to any physician in Cincinnati and vicinity and also to those interested in the allied sciences. As yet no work has been undertaken by this library to furnish patients with reading material, although the social service department has done something along this line.

We have the promise for the July number of this department of an article by Miss Alice M. Jordan, of the Boston Public Library, on books for children in hospitals and homes. Miss Jordan is an authority on children's books, and we have no hesitation in saying that this article will be of great value as well as interest. Reprints of the article may be obtained at cost from the secretary of the Association of Hospital Librarians, Miss Ida M. Woodcock, Butler Hospital, Providence, R. I.

# NEW EQUIPMENT

## A Support for the Patient During Nephrectomy

DESIGNED BY ANDERS PETERSON, M. D.,
Assistant Medical Director of the Los Angeles County Hospital.

Fig. 1. The apparatus is placed upon an ordinary examining table. One side has been removed to show the central curved portion.

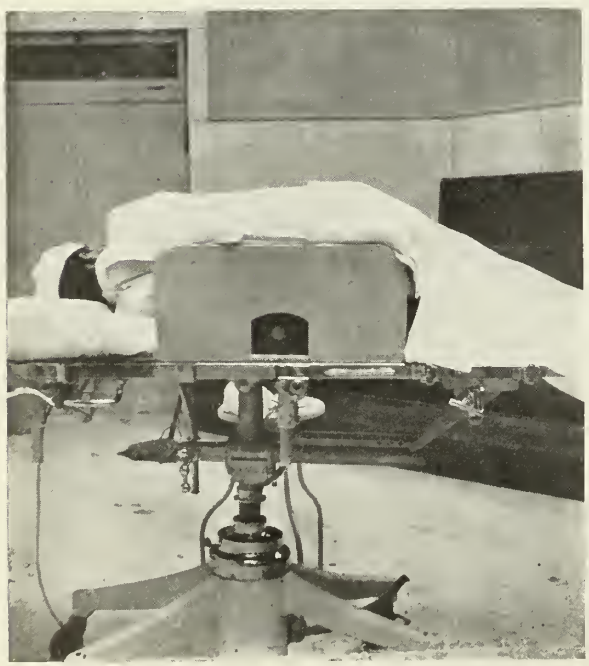


Fig. 2. Shows the patient placed into the support.

It is a well-known fact that much difficulty is experienced in maintaining the patient in a suitable position for lumbar nephrectomy by the use of sand bags and the ordinary kidney piece found attached to most operating tables.

The apparatus here illustrated is designed to meet the conditions most desirable during operation upon the kidney by the lumbar route—namely, a fixed position of the patient, resting upon the opposite side to the lesion, lateral flexion of the spine, and a comfortable plane of support to the patient. The patient is first etherized in the regular position, and is then lifted from the cart into the box, the operating table mattress having been placed over the central portion of the apparatus. A thin pillow may also be placed at the bottom for further protection to the patient.

The advantages which this support offer is that it holds the patient in a fixed position, and it can be adjusted to suit the size of any patient. It is inexpensive, and can be made in any carpenter shop. It can be transported easily, and can be used upon any table.

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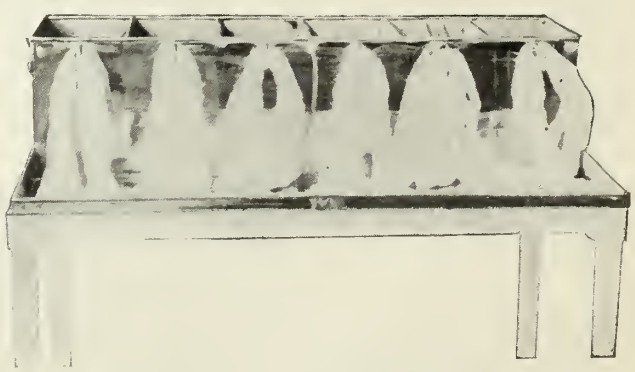
## Pad Counting Device

BY DR. R. H. JACKSON, Madison, Wis.

The apparatus illustrated shows a combined pad rack and compartment table, which has been in use for several years at the Madison General Hospital and has proven very satisfactory. It consists of an enameled iron stand, with four legs on casters in order to permit its being readily brought to and removed from the operating table. On this frame rests the counting device, the lower front portion of which is a shallow tray and the back portion consists of a series of six compartments open at the top. In front of each compartment is a blunt metal hook. The entire top is removable and easily sterilized.

The device serves the following purpose: the operator drops loose pads directly into the large nickel-plated tray, thus keeping them always in the specified places. The nurse in charge of used pads is instructed to hang



Jackson pad counting device.

them directly on the hooks in front of compartments, and when all the hooks are filled she takes the six pads, rolls them together and puts them in the outer compartment, and the next six pads in the next compartment, and so on. The nurse is thus able at any moment to give an

accurate account of the used pads by counting the occupied compartments, multiplying by six, and adding the number of pads still hanging on the hooks. This method keeps the greater number of used pads out of sight, and yet quickly available for further count.

Dr. Jackson states that in his experience the major number of lost pads have not been found in the abdomen, but in some out-of-the-way place, where the caprice of fate carried them on the heel of some bystander or in some other mysterious manner, and that it was to obviate this misadventure as far as possible that he designed this apparatus. The device is manufactured by the Scanlan-Morris Company, of Madison, Wisconsin.

### Portable X-Ray View Box

During the past few years the science of roentgenology has made rapid progress, and is now, in nearly all instances, a means of exact diagnosis, whether the evidence be negative or positive.

Considerable difficulty has been encountered in the past by the inadequate provision for dark rooms for the examination of plates, the attending physicians being frequently compelled to go to remote x-ray rooms or send assistants, who returned with unsatisfactory reports. Inasmuch as the interpretation of plates gains in value when viewed in close proximity to the patient, and as in addition to this

Portable x-ray view box.

the plates are easily broken, soiled, or scratched by careless handling, a problem of considerable moment has been presented.

Due to these inadequate facilities, Mr. Oliver Bartine, superintendent for the New York Hospital for the Ruptured and Crippled, has designed and constructed at small cost a portable x-ray curtained view box, containing a combination plate file, as shown in the illustration. The view box is covered by a folding curtain frame, which, when telescoped, will allow passage through the narrowest doorway. This apparatus has been found extremely helpful at the monthly clinical conference meetings, and is now regarded as an indispensable factor in the daily hospital routine work.

# NEW INSTRUMENTS AND APPLIANCES

VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.
Please address items of news and inquiries regarding New Instruments and Appliances to the editor of this department, 327 Southeast avenue, Oak Park, Illinois.

### Hypodermic Needles Made of Tempered Gold

It is an acknowledged fact that hypodermic needles made of platinum or platinum-iridium, and consequently rustproof, are the ideal needles for hypodermic injections. One objection to needles made of this material is that the points will not stay sharp for any considerable length of time on account of the nonrigidity of the metal, and another drawback to their general use is the comparatively high cost. Needles made of other precious and semi-precious metals, such as solid silver, nickel, etc., have been put on the market from time to time, but they have never attained the popularity of the platinum needles, mainly for the reason that the same objection of nonrigidity applies to them, as well as of corrosion resulting from sterilization, etc. Several years ago, however, a concern now operating under the name of the Precious Metal Tempering Company discovered a method of permeating knives, etc., with gold and silver, and treated the metal in such a way that the temper and consequently the edges of the knives are being preserved. The further discovery of tempering metals now enables them to manufacture hypodermic needles out of 14-karat gold.

On testing these needles the writer found that they have practically the rigidity of steel without the danger of breaking that is always present in tempered steel needles, and the manufacturers claim that they are absolutely impervious to rust or corrosion of any kind. The needles may be sterilized by steam, boiling water, or any aseptic solution. There seems to be practically no limit to their usefulness, as has been shown by a record which has been kept of some of the needles in use, which proves that they have been used in from 3,000 to 7,000 injections and are still in perfect condition.

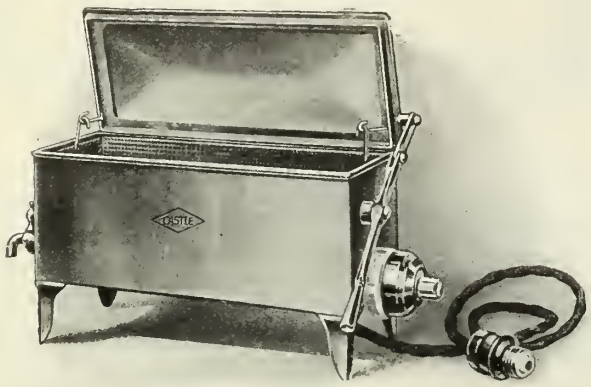
Inasmuch as the cost of these needles is lower than that of needles made of platinum, it seems that, from the point of economy as well as efficiency, they should commend themselves especially for use in hospital practice.

### Electric Instrument Sterilizer.

The Wilmot Castle Company, of Rochester, N. Y., has recently perfected and put on the market a new instrument sterilizer with an electric heating unit, which has several features that are well worth considering when the purchase of such an apparatus is contemplated. The most important of these new features is that it cannot burn out in case the attendant fails to turn off the current. Some of the sterilizers now in use are provided with a so-called safety fuse which melts as soon as the sterilizer becomes too hot. On this new apparatus, however, there is an au-

tomatic device which breaks the contact even before all the water is evaporated. Consequently the necessity of attaching new safety fuses after failure to turn off the current is avoided.

A convenient electric switch, attached to the sterilizer, gives just the right amount of heat in order to work economically. The switch dial shows whether high, medium, or low current is being used. With a lever, which is




Castle instrument sterilizer.

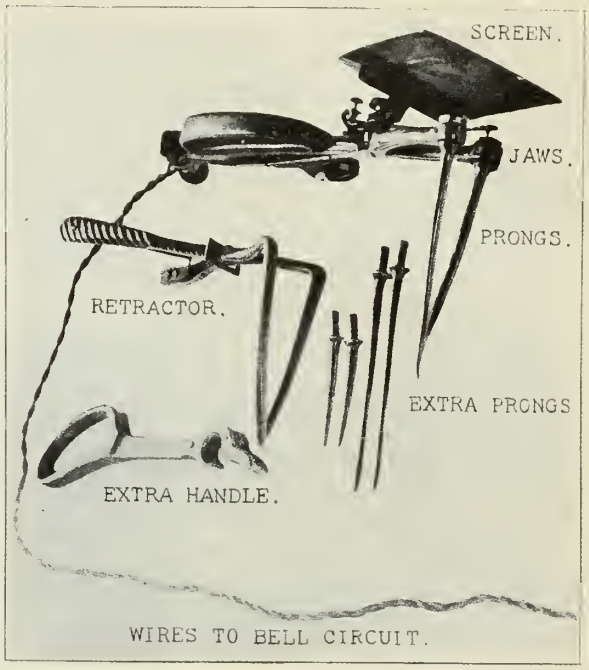
pushed downward, and which has a cool handle, the instrument tray is raised out of the boiling water and the tray stays up, so that the instruments may drain and cool off. A drain is also provided for emptying the sterilizer, as well as a small wire basket which is convenient for needles and other small instruments. The sterilizer is made in three sizes, 10½, 13, and 16 inches long, with width and depth in proportion to the length.

### Instruments for Locating Foreign Bodies

Many new instruments and other devices have of late been designed by military surgeons, some of these appliances being improvements over former types and others being entirely new. There are, of course, numerous methods of locating foreign bodies; some have much merit, but the instruments here illustrated have particular value in locating metallic substances.

These instruments have been designed by Captain A. E. Barclay, of the Second Western General Hospital, Manchester, England. We recently described in this department certain instruments suggested by W. Wullyamoz, of Lusane. The equipment used by Dr. Barclay is patterned somewhat after the Wullyamoz design, but are unquestionably superior in shapes. The forceps are constructed with the two parts insulated so as to combine the telephone principle for the location of foreign bodies, and also have a fluoroscope attachment. Attached to the jaws of the forceps are two prongs. These prongs serve as both probes and grasping forceps. When the foreign body is to be removed, the ordinary localization is first made and the marker placed upon the skin. A piece of x-ray proof cloth with a hole about three inches square is then spread under the part, the operating being done through the hole in the cloth. There is thus a very small field of x-light, and this is practically limited to the area surrounding the foreign body. The x-ray apparatus is then started, the room being dark, and a preliminary examination with the fluoroscope attached to the forceps is made. If an incision is necessary, this part of the operation can be carried out without difficulty.

Frequently, however, probing through the wound with the help of the fluoroscope, the surgeon is able to locate the particle of metal. Just as soon as it is grasped and the jaws of the forceps come in contact with the foreign




Barclay's foreign body instruments.

body, the electrical circuit is completed and a buzzer or bell makes known this fact.

All the parts used can be sterilized, being made of metal or rubber, and the screen, being inclosed in celluloid, is kept sterile by means of solutions.

### Improved Pressure Sterilizer

A pressure sterilizer of new design and added convenience in handling has been placed on the market. The designer has demonstrated his knowledge of the requirements of a pressure sterilizer, as evidenced from the number of radical improvements which have been made. In general form, there have been but few changes in the design of hospital sterilizers, in spite of the fact that there are certain features which have always proven of more or less inconvenience to the surgical nurse. These points seem, in the present apparatus, to have been overcome.

As shown in the illustration, the sterilizing drum is of spherical form. Both the inner and outer shell are made of seamless drawn copper. The pedestal supporting the sterilizer proper contains a compartment for sterile water, and all steam pipe connections, water connections, and waste are made under the base. This makes it a self-contained unit, having no exposed piping, and therefore presenting a neat appearance in the sterilizing room.

The usual hinged door of the sterilizing chamber is not used. The door is like a valve seat, having a ground joint fitting, which is steam tight and with which no gaskets or packings are used. The internal steam pressure holds the door firmly in place, and it cannot be opened until all steam pressure has been removed. The door is opened and closed by means of a foot lever, so that one need not touch the hot door with the hands during the time material is placed into the sterilizer or removed.

The instrument sterilizers of this same type have the trays arranged with telescopic handles, which pull out to

the front and are attached to the tray, and the handles are by this means always sterilized with the tray and instruments. Leaving the tray out from the front avoids exposing the hands and arms of the nurse to steam which always rises the instant the sterilizer is opened.

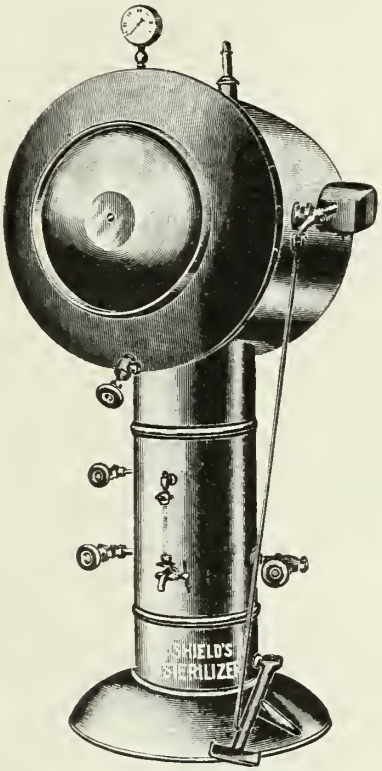



Fig. 1. Shield's dressing sterilizer.

The utensil sterilizers of the same manufacture are built along similar lines, being equipped with a hydraulic foot device for lifting the trays out of the hot water. The bed pan sterilizers are arranged with steam coils and with mufflers to prevent noise during the sterilizing process.

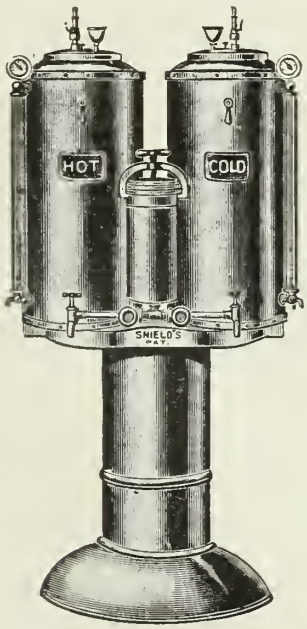



Fig. 2. Shield's water sterilizer.

All forms of sterilizers are heavily nickel-plated, the manufacturer stating that he believes nickel-plating to be the most satisfactory form of finish for pressure sterilizers, since white enamel has a tendency to check, change color, etc., after being used for a time.

### Urological Examining and Operating Table

BY DR. HUGH H. YOUNG, Baltimore, Md.

The top of this new table is adjusted by means of a milled worm-gear and ratchet, so that it will remain fixed in any position without the aid of screws or clamps to fasten it. It can be adjusted so as to elevate the buttocks, affording excellent drainage to a sliding pan below, emptying into an oblong trough. A large recess under the buttocks and in the foot-end give ample access to the patient. The foot-end is detachable, as shown in Fig. 2, thus permitting the drain pan to be removed.

The knee-crutches are arranged so they swing anteroposteriorly and rotate on the rod. The shafts are bent in order to spread the knees far apart, and are mounted in a novel swinging socket, so that they may be tilted forward

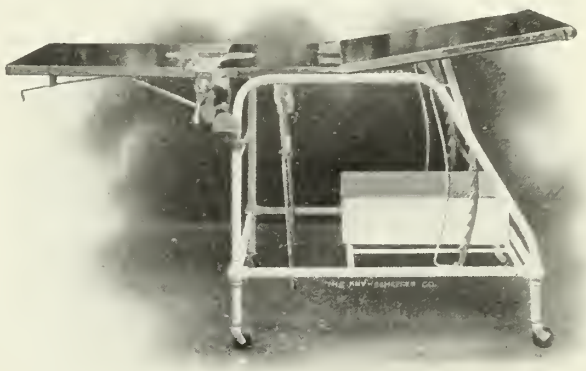


Fig. 1. Young's urological table, horizontal position.

to any angle down to the plane of the table, with the knees extended, bringing the organs to the edge of the table, while the shoulder supports prevent the patient from sliding backward.

An etherizer screen is provided, attached to and moving forward and backward with the shoulder support sockets.

Fig. 2. Young's urological table, examining position.

The top can be quickly adjusted to an acute Trendelenburg position by a worm-gear and crank, and, although the table was originally designed for genitourinary work, it is well adapted for general surgical work.

# QUERIES AND ANSWERS

### Destruction of Red Ants

To the Editor of THE MODERN HOSPITAL:

There are so many helpful things given in your magazine that I feel I would like to tell you of my troubles and see if I could not receive some help.

For two years we have occupied a new fireproof building, with composition floors. For nearly a year we have been troubled with the tiny red ants. We cannot find where they come from, but they are in the kitchen on the first floor and in the diet kitchens of both second and third floors. A chemical company was very sure that its material would eliminate the pests, and I put the matter into its hands. After several applications of its material the ants were still as bad as ever, and the company feels that its efforts are without effect and so are doing nothing more. We have wrapped cloths saturated in turpentine around the legs of the tray racks, we have sprayed exterminating preparations into every place that it is possible to spray such material, and still we have ants and quite as numerous as ever. I would be very grateful for any suggestion of anything that will eliminate these pests.

A SUPERINTENDENT.

We have asked the surgeon-general of the Public Health Service of the United States to reply to this query, and the following reply comes from Dr. W. C. Rucker, assistant surgeon-general, on information secured from the Department of Agriculture, Bureau of Entomology:

The distinctively house-inhabiting ants, such as the little red, or Pharaoh's, ant, and other imported species nesting in the woodwork, masonry, or articles of furniture, etc., are often very difficult to eradicate because of their inaccessibility. If the situation of the nest can be located by following the workers back to their point of disappearance, the inmates of the nest, if nearby, may sometimes be reached by injecting a little bisulphide of carbon, kerosene, or gasoline into the opening by means of an oil can or small syringe. In the use of these substances, naturally, precautions should be taken to see that no fire is present, as all of these are inflammable. If the nest is under flooring, it may sometimes be reached by removing a section, but, as a rule, unless the colony can thus be reached and destroyed, other measures are of only temporary avail if food or other conditions continue to attract the ants and facilitate their continued breeding in the house.

The removal, therefore, of the attracting substances in houses, wherever practical, should be the first step. Ants are attracted by food material, especially bread, sugar, meat, and like substances, in pantries and elsewhere, and the nuisance of their presence can be largely limited by promptly cleaning up all food scattered by children and by keeping all food supplies in the pantry or storeroom, and limiting the amount of such articles as far as possible to daily needs.

That it is possible to drive ants away from household supplies by the use of repellents, particularly camphor and naphthalene flakes, or moth balls, has been asserted. The use of most such repellent substances, however, in connection with food supplies is impracticable, and careful tests have indicated that such substances have only slight repellent properties and bring comparatively little benefit.

The collection of ants by the use of attractive baits is frequently recommended. Perhaps as convenient a bait as any consists of small sponges moistened with sweetened water and placed in the situations where they can be easily reached by the ants. These sponges may be collected several times daily and the ants swarming on them destroyed by immersion in scalding water. It is reported also that a syrup made by dissolving borax and sugar in boiling water will effect the destruction of the ants in numbers. Remedies of this kind, however, are of doubtful value. They may be useful at the outset when the colonies are few and small, and most of the individuals may by these means be secured and destroyed. Very frequently, however, the distribution of such baits will simply result in a more wide exploitation of a good forage ground and an actual increase of the ant nuisance.

A remedy which perhaps may prove to be more efficient where it can be safely used is the use of poisoned syrup, recommended by Mr. Popenoe, of this bureau, the idea being that the ants will collect this poison syrup and convey it to their nests, so that not only the ants which collect the syrup are ultimately killed, but the inmates of nests feeding on it also succumb. Mr. Popenoe recommends the following formula for the preparation of this syrup: 1 pound of sugar dissolved in 1 quart of water, to which should be added 125 grains of arsenate of soda. The mixture should be boiled and strained, and on cooling is used with sponges, as already described. The addition of a small amount of honey is said to add to the attractiveness for ants of this mixture. Naturally, the greatest precautions should be used in the preparation of this syrup and in its safeguard afterward to prevent its being the source of poisoning human beings or domestic animals.

This method, on the authority of Mr. Popenoe, has been tried under his direction for three years, and has given very satisfactory results both in the hands of private persons and of professional insect exterminators.

### Some Structural Problems

To the Editor of THE MODERN HOSPITAL:

I am contemplating putting up a two-story building, 30 by 90 feet, for hospital purposes, and a residence 30 by 40 feet at the side, a common wall to be used. I would like to get your opinion as to the best form of heat to be used —hot water, vapor steam, or some other form of steam.

I would also like to get your opinion as to comparative worth of a solid brick wall—furred, lathed, and plastered —as compared with hollow tile wall, and also as compared with an outer course of brick and 8-inch hollow tile lining, compared chiefly as to warmth, heat retaining properties, and protection against cold winds.

There seems to be a very divergent opinion on these two important subjects, and I will appreciate any information and advice you can give. A PHYSICIAN.

We have asked Mr. Richard E. Schmidt, architect, of Chicago, to answer these questions, and he replies as follows:

In answer to your inquiry would state that for small hospital purposes, where steam is not desired for heating water, sterilizing, laundry work, or cooking, we would recommend hot water. If steam is desired for such purposes, we would then suggest a vapor system, and provide boilers of a type so that higher-pressure steam could be had for kitchen, sterilizing, water heating, and laundry purposes.

It appears to me that a two-story hospital 30 by 90 feet should be equipped with steam sterilizers, steam laundry mangle, dryer, and steam tables; a boiler for hot water heat and another for steam would not be economical in first cost or operation, and vapor heating is as satisfactory as hot water heating.

In regard to the conductivity of various types of walls, would state that a 12-inch brick wall, furred on the inside and plastered, has been found to have a uniform heat loss of approximately .20 B. T. U. per square foot per degree difference in temperature between the outside and inside atmosphere. A wall with 4 inches of brick, backed with 8-inch hollow tile and plastered direct on the tile, would give a heat loss of .28 B. T. U. per square foot per degree difference, and a 12-inch hollow tile wall, plastered inside and outside direct on the tile, would give approximately .33 B. T. U. per square foot per degree difference. If the latter two types of wall were furred, same as mentioned for the 12-inch brick wall, the heat loss could be reduced to practically the same as the 13-inch brick wall furring.

The local cost of face brick, common brick, tile, exterior cement coating, and the design are important factors in determining the relative cost.

Inasmuch as warmth, heat retaining properties and

protection against cold winds are subject to the heat loss through the walls, the construction having the least loss (as above set forth in British thermal units) is the most desirable in respect to such qualities. Fuel consumption will be in direct proportion to the loss in B. T. U.

### A Hospital for Profit

To the Editor of THE MODERN HOSPITAL:

We are contemplating building a hospital, to be purely a stock company institution, and would like to have you advise us if there are any stock companies conducting hospitals today that are paying investments, and also would like to have you advise us, if possible, what percent on the investment such hospitals are paying, furnishing names of same. A SOUTHERN HOSPITAL COMPANY.

There are many hospitals in this country that are conducted for profit and there are many that make a very large profit—just how much, no one except those who can see the books can tell. Hospital owners, corporations, or individuals that are conducting their hospital for profit do not talk about their profits, because they know perfectly well that it is not a very ennobling thing, and that it is very highly unethical to make money out of the conduct of a hospital—not unethical of itself, but because where money is the motive the hospital is invariably conducted without reference to anything except money.

Sometime ago, a year perhaps, a physician participant of a stock company hospital, the other owners being three or four other medical men in the town, came to us in search of a new superintendent, and, when we made inquiry as to why he wanted to make a change, he told us that, up to a year before, their present superintendent had earned from 80 to 100 percent net on their investment, but that for the past year she had earned only 40 percent, and they were dissatisfied and wanted someone who could do better. Of course, we declined to have anything to do with any such proposition and told him what we thought about that sort of business.

It is easily conceivable that almost any hospital could be so conducted, if it were necessary, as to be self-supporting; and if it could make more money than actually necessary to meet its obligations, then it should use that money in expansion, either in the number of beds or in the quality of service to its patients; and if such a hospital could continue to make money in spite of proper expansion and adequate service to the sick, then we think it should expend its surplus in the payment of salaries for all-time medical men, so that it might give its sick people the benefit of group diagnosis and group treatment.

Our advice to you is not to have anything to do with a hospital predicated on profit, and it seems to us that, especially for a hospital using the word "Protestant" as a part of its title, it would be a most sordid thing to have its activities predicated on the earning of money for stockholders.

It would be a fine thing, of course, if your hospital could be so organized that its earnings might be adequate to give a fine service to the sick, and, if you care to have us do so, we shall be very glad to help you perfect such an organization. Of course, it would be necessary for us to have a lot of data as to your present capacity and the details of the conduct of your affairs.

### Problems in the Laundry

To the Editor of THE MODERN HOSPITAL:

Can you tell me any way I can take blood stains out of the hospital linen? All our linen goes to the public laundry, as we have not the room to install a laundry of our own. The surgery linen is soaked in cold or tepid water and sent wet. Sometimes, I am sure, pieces are sent from the beds not soaked, but not very often, as I find most nurses obey rules with a very little watching. The owner of the laundry promised, every time I complained, that he would try to do better, but a short time ago he told me he could not do any better, and suggested I try another laundry, which I could not do, as he has the only modern machinery in town that could handle our work.

While writing you, I will also ask what, in your opinion, our laundry bills ought to average. We have a small hospital, all private rooms, except one ward of 3 beds. Our average last year was 10 patients daily and a staff of five nurses. Our laundry bill for the year was $1,643.50.

I hope you will answer this note either by letter or in the "Queries and Answers" of your journal.

There is no way of which we know to take blood stains out of linens unless the stains are taken out before the blood has time to dry, or at least very shortly thereafter. The unchangeable character of blood stains is due to the iron in the blood, and you know that if you put iron rust dampened next to a piece of laundry—as, for instance, a buckle—it will be only a very short time until that piece of laundry wears through. Iron destroys the fabric, rots out the threads, and there is no earthly way to get these stains out except to take out the threads that are stained, and that means the wearing out of your fabric. The only thing for you to do is to put into force a technic in your nursing corps that will provide for the immediate washing of blood out of any stained garment or fabric. We are sorry that we can give you no more encouragement than this.

In regard to the amount of your laundry bills, a small general hospital ought to use about ten or twelve pieces per day per patient. That includes the nurses' uniforms and laundry, laundry for the female help, your table laundry, and the bed laundry for patients—that is, everything in the house. We imagine that you have pretty nearly one well person to one sick person in your house—that is, an average of 10 patients—and you have five nurses, and you probably have at least five other people. In a larger hospital the laundry runs about fifteen or twenty pieces per patient per day, but, in a small hospital like yours, the greater care that can be exercised by individual attention will reduce the amount of laundry; and in a large hospital we have figured that the laundry can be done for approximately half a cent per piece, taking all sorts of pieces—that is, small things like diapers and napkins and towels, and the large flat work, such as sheets and pillow cases, and the individual stuff, such as nurses' uniforms, etc. With these facts before you, you can readily make a guess that your laundry will run somewhere in the neighborhood of a hundred and fifty pieces per day, and I should say that in a hospital of that size a cent per piece is a fair working price. That would be only about $1.50 per day, or $45 a month, or $540 a year. It seems to me that, under average conditions, that ought to take care of you, but I should say that $600 per year ought to take care of that size hospital. We do not see where you can put any such money as $1,600. Perhaps there may be some extraordinary reasons why your laundry is so high, but we are not advised of these.

### Temporary Care of the Insane

To the Editor of THE MODERN HOSPITAL:

The Board of Commissioners of Huntington county is contemplating the erection of the county hospital, and, as attorney for the Board of Commissioners, I am interested in getting information on the subject of hospitals. The board has in mind the erection of such a hospital as will supply the needs of this county. At the present time the county has no provision or place for taking care of per-

sons who become insane or mentally deficient, and who are required to be held until they can be delivered to the state institutions, except that they must be held in the county jail. Before the subject of the county hospital came up it had been the intention of the board to erect a small addition to the county poor farm building, located about two miles from the city, so that such patients might be held there. Since the county hospital project has been taken up the suggestion has been made that a detention ward or apartment could be built in connection with the hospital which would serve the purpose of detaining such persons as it is necessary to detain until they can be transferred to the state institution. It has been suggested that this would be more economical; that it would remove the odium that would attach to the holding of demented persons at the county jail or county poor farm, and, furthermore, that such persons would be at the hospital, where they would receive proper medical attention. It has been suggested that such apartment or ward in the hospital can be protected and safeguarded from the other part by soundproof walls and other modern methods.

As this matter has, no doubt, come to your attention, and you have gained some knowledge through experience, I would be pleased to have you give me some suggestions and ideas pertaining to this matter. INQUIRER.

The building or unit, of which you speak for the purpose of holding mentally disturbed patients until they can be finally adjudged insane and committed has come to be a well-defined hospital unit, according to modern hospital principles in this country, and we call it the psychopathic hospital or the psychopathic service in a general hospital.

In modern medicine we have done away with all forms of physical restraint, excepting perhaps bars on windows at some places and under some circumstances, and we are sure your people are doing well to think about caring for these unfortunate sick outside of prisons and almshouses.

A great number of people become mentally disturbed as the direct cause of physical illness or hurt, and it is little short of criminal—indeed, we think it is actually criminal—to place these people under the stigma that attaches to all forms of insanity. We have some well-defined sicknesses that often terminate temporarily in insanity. For example, we have the toxic insanity following typhoid fevers; these people are mentally irresponsible sometimes for months, but eventually they nearly all get well if properly cared for. Then there are a considerable number of women who become temporarily insane following childbirth, due to the absorption of toxic principles in the blood and which operate directly on the nervous system. These women all get well eventually, although temporarily they seem to be afflicted with one of the most violent forms of insanity, but these forms of insanity are no more hereditary than they would be if the cause were a blow on the head with a baseball bat, and our civilization has no right to inflict on the subjects of these sicknesses the odium of a stain of insanity, because such an odium goes down through the generations, and is certain to do incalculable harm to a whole line of people.

There is a law in most states covering the psychopathic hospitals. Sometimes it is called the detention hospital, but, whatever it is called and however it is physically equipped, it is a very necessary adjunct to every hospital and has nothing whatever in common with a prison or poor farm.

And it is not necessary that this unit should be elaborate or expensive. For your community, for instance, we think there ought to be two or three rooms, with a device in the window of each that would permit each to be barred. If you eventually decide on this arrangement, we shall be very glad to give you a scheme by which these windows can be barred instantaneously when a disturbed patient is to be put in one of them, and so arranged that the bar can be instantaneously taken out when the room is to be used for a patient who is not mentally disturbed. Besides these two or three rooms, we think we would have a ward of two or three or four beds whose windows might also be barred when necessary. You will find that soundproofing is not necessary at all, because there are methods of treatment for those cases that make physical restraint and soundproofing practically unnecessary. We refer now to the uses of hydrotherapy, and it is not necessary that the hydrotherapeutic agents be either extensive or elaborate. About all that is necessary is a massage table—say, 30 inches high, 2 feet wide, and 6 feet 6 inches long. The best of these tables is made of wood. In practice this table has a blanket folded four or five times and laid on it, with a canvas or sheet on top of that, and the patient can then be put into a hot or cold pack on this massage table. The "packing" method is thoroughly standard in all hospitals, and the technic is well understood. We are sending you a copy of THE MODERN HOSPITAL containing a paper by Dr. O'Malley, of the Government Hospital for the Insane, Washington, D. C., in which you will find illustrations of these packs. You will also find in this article a scheme for giving the continuous bath, which is the only other form of hydrotherapy that such a service as you are thinking about would need. Patients of the most violent character can be quieted and very permanently helped by the intelligent use of one of these forms of hydrotherapy. We do not find it necessary any longer to shackle or otherwise restrain even delirium tremens patients, and, as has been shown in all the principal hospitals of the country, delirium tremens is now curable to an extent never dreamed of before.

We are making just a little bit of a sketch, crude and elementary, that will give you exactly what we are thinking about for your psychopathic unit. Instead of its being off to itself, as indicated in this sketch, it can be on any floor of your hospital, in any wing, or a part of another unit, and will never be any such disturbance to other patients, for instance, as a maternity service would be. I am also having sent you a copy of the October, 1914, number of THE MODERN HOSPITAL containing an article on the Chicago Psychopathic Hospital, which will give you a very definite idea about the modern care of mentally disturbed patients.

### The "Usual Duties" of Matron

To the Editor of THE MODERN HOSPITAL:

Will you kindly tell me what are considered the "usual duties" of the matron in a small 60-bed hospital and nurses' home? The duties of matron do not seem to be clearly outlined in most hospitals, and in this instance the matron is appointed by the City Council, and no duties, except "usual duties," are mentioned. I would be pleased to have your broad views on the matter.

A TRAINING SCHOOL PRINCIPAL.

The "usual duties" of the hospital matron are, as you say, hazy and indefinite. The reason is because women who are acting as hospital matrons differ quite as widely in their capacity to shoulder work as men and women differ in other fields of industrial activity. We have known hospital matrons who relieved the superintendent of the institution of an infinite number of details of hospital work in nearly all the departments of the institution—simply because they proved themselves competent, active, and ambitious, and it has been our experience that the world generally is perfectly willing for most anyone to work who is willing to do so.

We have known other hospital matrons who merely looked after the cleaning of the house, had nothing to do

with the kitchen, had nothing to do with the wards and rooms, nothing to do with the laundry or the linens—in fact, did nothing except supervise the work of the maids and floor men.

Because of this indefinite character of the "usual duties" of the hospital matron, the whole business must be one of team work and cooperation.

But, being more specific for your information, in most hospitals the matron is expected to employ and discharge all the common help, excepting those in the scientific departments, including, of course, the nursing department. She is expected to direct the work of all the cleaning people in the house, including the work in the wards and private rooms; to handle the work in the service rooms, except the actual feeding of patients, which should be under the nursing department, and should be performed by the nurses; to look after the linens and cotton goods and the laundry work; it is her people who gather and count the soiled linens and get them to the laundry; it is her people who do the laundry work and her people who should get the clean laundry back into the linen rooms and thence into the various ward units, and it is her people who should command and operate in the sewing room and, therefore, she should be held responsible for everything concerning laundry goods. She should get regular requisitions from the nursing department for the sterilization of mattresses and blankets and pillows when it is needed, and she should see that the work is done after a technic prescribed by the superintendent of the hospital. She is expected to handle all the dining room help, and to see that the meals for interns and the common help are properly prepared and served. Usually the menus for all departments of the hospital are made by the regular dietitian, and it is the duty of the matron to see that the foods bought and ordered are properly prepared and served, and her work incident to this preparation and serving is under the direction of the dietitian or the person holding the office corresponding to that. She is expected to see that the nurses' home and the employees' home are kept in perfect order.

It can be easily understood that a matron with this line of duties could have very much friction with the nursing department unless there is cooperation in the handling of laundry goods, because, in a final analysis, the nurses use the laundry goods for their patients, and so important is it that there should be cooperation between the matron and the nursing department that we have sometimes felt that the entire laundry service should be turned over to the head of the training school in order that there might be no opportunity for friction, and in order that the responsibility and authority concerning the handling of laundry goods should be concentrated in one person.

It seems to us that if all responsibility in the hospital is concentrated in the superintendent of the institution, and he or she is broad-minded and a capable manager, the work of the department heads can be arbitrarily apportioned out, fitting each task to the person intended to perform it, and there should not be any friction in the hospital; lacking such an executive head, it is very certain that there will be friction, especially if there are some departments in which there are ambitious persons who are trying to do things.

We have very often found in a hospital a most unpopular and thoroughly disliked person whom all the department heads accused of attempting to usurp their duties and functions; on closer analysis we have found that the objectionable person was frequently the only competent person in the establishment, and her activities were an attempt to get necessary things done. We have in mind particularly one institution in which we found this condition existing, and in which the friction had existed for a good while and had grown intolerable. On our advice the board of trustees made the unpopular woman superintendent of the hospital; nearly everybody resigned, of course, and most of the resignations were accepted. New people were brought in and we do not know a hospital, for a small institution, that has been better conducted since that time. So there was a reason for the usurpation of function in this case.

You ask us for a broad view of this matter, and we have tried to give it to you; the text of our advice is team work.

## THE NEW THERAPY

### Occupational Work for Chronic and Convalescent Patients and Inmates of the Department of Public Charities

The therapeutic value of work for certain classes of convalescent and chronic patients, especially neurological cases, is now recognized. The Department of Public Charities, in cooperation with the New York City Visiting Committee of the State Charities Aid Association, has recently organized a committee to take charge of the development of such occupational work among the patients and inmates of the department.

Eight years ago the New York City Visiting Committee sent a teacher to the chronic patients on Blackwell's Island. In 1914 the city granted salaries for three trade instructors. Last January a meeting was held at which Deputy Commissioner Henry C. Wright presided. Testimony as to the need and value of occupational work was given by Dr. Charles L. Dana; Dr. Brush, of the Burke Foundation; George E. Barton, of Clifton Springs; Mr. Scanlon, of the Lighthouse for the Blind, and many others. Dr. Russell sent his trade instructors from Bloomingdale.

Dr. Dana said in part: "My experience has been that for convalescents, particularly mental patients, there should be something to occupy the hands while their minds are resting. I most emphatically approve of the work which is now being initiated and extended." As a result, work with the neurological patients was undertaken at once.

Through the generosity of private donors the services of a teacher of handicrafts and of a lacemaker were assured for six months. The occupation for the invalids is to be prescribed and supervised by the attending neurologists of the hospital selected and a careful record kept of the progress of the patients.

The success of the plan would be more assured if a general director, to coordinate the work of the present teachers and trade instructors of the department and to utilize the services of volunteers, could be engaged.

The work should be extended to other patients and inmates as well. In 1913 a special committee of the Board of Estimate examined 500 men at the city homes, and found 41.41 percent sick and infirm and 58.59 percent able to work. It is probable that the services of the latter could be utilized to greater advantage than at present, and that many of the sick and infirm could make attractive and useful articles. The period of stay of certain convalescent patients may also be shortened by this health-giving, hopeful work, with a consequent saving to the city. The advantage to the department by gaining these useful articles is obvious.

Dr. McCoy, of Alliance, Neb., will soon open a private hospital in that city.

# HOSPITAL, MEDICAL, AND SPECIAL MEETINGS

## AMERICAN HOSPITAL ASSOCIATION MEETING

### The Tentative Program Indicates a Very Interesting Meeting—Important Subjects to Be Presented

The president of the American Hospital Association, Dr. Winford Smith, has completed the tentative program of the Philadelphia meeting, to be held September 26-29.

Miss Jordan's program of the Section on Small Hospitals is yet to be completed, and also the Evening Round Table for Large Hospitals.

A careful study of this program will develop the fact that it is a very strong one; topics are discussed that are most pressing at the present time. Everybody should begin now to plan to attend the convention.

TENTATIVE PROGRAM

TUESDAY, SEPTEMBER 26, 1916

MORNING SESSION—Invocation, Rt. Rev. Philip M. Rhinelander, bishop of the Diocese of Pennsylvania (Protestant Episcopal Church). Address of welcome, Mayor of Philadelphia. President's address, Dr. Winford Smith, president, superintendent Johns Hopkins Hospital. Report of Committee on Constitution and By-Laws. Medical Organization and Medical Education, Dr. Charles H. Young, superintendent Presbyterian Hospital, New York city. Discussion opened by Dr. L. B. Baldwin, superintendent University Hospital, Minneapolis, Minn.

AFTERNOON SESSION—Report of Committee on the Training of Nurses, Ella Phillips Crandall, R. N., executive secretary National Organization for Public Health Nursing, New York city. Report of Committee on Grading and Classification of Nurses, Charlotte Aikens, chairman, editor *Trained Nurse and Hospital Review*, Detroit, Mich. Discussion. The Open Door Hospital, Dr. W. L. Babcock, superintendent Grace Hospital, Detroit, Mich. Discussion, Dr. J. W. Fowler, superintendent Louisville City Hospital.

EVENING—Symposium on Out-Patient Work—1, What Dispensary Work Should Stand For, Dr. Richard C. Cabot, Boston. 2, Clinics for Venereal Disease—Why We Need Them—How to Develop Them, Dr. William F. Snow, secretary of American Social Hygiene Association. 3, Industrial Accident Cases in Dispensaries—Should They Be Accepted?—How Shall the Finances Be Managed? Speaker to be announced. 4, New Features in Dispensary Work (Committee Report), Michael M. Davis, Jr., chairman.

WEDNESDAY, SEPTEMBER 27, 1916

MORNING SESSION—Report of Committee on Hospital Construction, Dr. Walter B. Ancker, superintendent City and County Hospital St. Paul, Minn. Hospitals and Esthetics, Grosvenor Atterbury, F. A. I. A., New York city. Discussion, Mr. F. F. Leiper, superintendent P. E. Church Hospital, Philadelphia, Pa.; Dr. Herbert B. Howard, superintendent Peter Bent Brigham Hospital, Boston, Mass. The Hospital Dietary, Dr. Elliott P. Joslyn, associate professor of medicine Harvard University. Discussion, Thomas McRae, professor of medicine Jefferson Medical College, Philadelphia, Pa.

AFTERNOON SESSION—*Large Hospital Section*—Disinfection and Other Practicable Methods of Preventing the Spread of Infection in Hospitals, Dr. Robert J. Wilson, superintendent of hospitals New York Health Department. Discussion, Dr. William H. Walsh, Philadelphia, Pa. The So-Called Diphtheria Epidemics in General Hospitals—Preventive Measures, Dr. Clyde G. Guthrie, associate in medicine Johns Hopkins University. Discussion, Dr. R. R. Ross, superintendent Buffalo General Hospital, Buffalo, N. Y. Autopsies—Methods of Obtaining Same and Measures of Protecting Hospital, Dr. Milton C. Winternitz, associate professor of pathology Johns Hopkins University. Discussion, Dr. Frank Holt, superintendent Michael Reese Hospital, Chicago, Ill. *Small Hospital Section*—Program in charge of Miss Nettie B. Jordan, second vice-president, who will preside.

EVENING—Theater party, Keith's Theater. Arranged by the Entertainment Committee.

THURSDAY, SEPTEMBER 28, 1916

MORNING SESSION—Report of Committee on Bureau of Hospital Information, Dr. Thomas Howell, superintendent New York Hospital. Report of Committee on Hospital Standardization, Dr. John A. Hornsby, editor of THE MODERN HOSPITAL. A Study of Hospitals for the Purpose of Arriving at Proper Standards, Mr. John J. Bowman, director American College of Surgeons. Team-Work and Stumbling Blocks, Dr. Charles A. Drew, superintendent Worcester City Hospital, Worcester, Mass. Discussion, Dr. Charles D. Wilkins, superintendent Charity Hospital, New Orleans. Dental Clinics in General Hospitals, Dr. Thomas B. Hartzell, University Hospital, Minneapolis, Minn. Discussion, Dr. Simon Cox, superintendent New Haven Hospital, New Haven, Conn. Luncheon at Pennsylvania Hospital, 12:30 to 2:30, by invitation of the trustees and superintendent of the Pennsylvania Hospital.

AFTERNOON SESSION—*Large Hospital Section*—Report of Committee to Memorialize Congress to Place Instruments on the Free List, Rev. G. F. Clover, superintendent St. Luke's Hospital, New York city. Report of Committee on Hospital Finances and Cost Accounting, Dr. A. R. Warner, superintendent Lakeside Hospital, Cleveland, Ohio. Building the Hospital—Departments and Rooms, Mr. O. H. Bartine, superintendent Hospital for Ruptured and Crippled, New York city. Discussion, Dr. A. C. Bachmeyer, superintendent Cincinnati General Hospital, Cincinnati, Ohio. Convalescent Hospitals—Methods, Results, Dr. Frederick Brush, superintendent Burke Foundation, White Plains, N. Y. Discussion, Dr. F. A. Washburn, superintendent Massachusetts General Hospital, Boston, Mass. *Small Hospital Section*—Conducted by Miss Nettie B. Jordan, second vice-president.

EVENING SESSION—Round Table Session for Large Hospitals, conducted by Dr. John A. Hornsby, editor of THE MODERN HOSPITAL. Any member who wishes to have a topic discussed may suggest the same to Dr. Hornsby, Tower Building, Chicago, Ill. *Small Hospital Section*—Question Box Session, conducted by Dr. C. D. Wilkins, vice-president. Those who have questions which they wish to have discussed may send them to Dr. C. D. Wilkins, Charity Hospital, New Orleans, La.

FRIDAY, SEPTEMBER 29, 1916

MORNING SESSION—Report of Committee on Legislation, Dr. H. T. Summersgill, superintendent University of California Hospital, San Francisco, Cal. Treasurer's Report. Report of Auditing Committee. The Hospital and the Surgeon, Dr. S. S. Goldwater, superintendent Mt. Sinai Hospital, New York city. Discussion, Dr. John G. Clarke, professor of gynecology, University of Pennsylvania. Report of Committee on Efficiency and Progress, Dr. George O'Hanlon, superintendent Bellevue and Allied Hospitals, New York city. Election of Officers. Report of Committee on Time and Place of Next Meeting. Adjournment.

AFTERNOON—A boat ride down the river and a visit to League Island and the Navy Yard. An auto trip through Fairmount Park to Valley Forge and Washington's headquarters during the Revolutionary War. The Committee on Social Arrangements has also made provision for visits to the United States mint, Independence Hall, Wanamaker's stores, and other points of special interest at various times during the convention.

## MILWAUKEE TO HAVE GREAT MEETING

### Second Annual Convention of the Catholic Hospital Association Promises to Be Splendid Success—The Program and Instructions to Those Who Are to Attend

The big hospital convention for this month is that of the Catholic Hospital Association, which meets in Milwaukee on June 7, 8, and 9. Last month we published a tentative program. Below we publish the complete program, including those who will discuss papers.

The secretary of the association, Dr. Maud R. Williams, 431 Twelfth street, Milwaukee, has issued the following information for the benefit of those who expect to attend:

PROGRAM

FIRST DAY, WEDNESDAY, JUNE 7

9:00 a. m. Mass and sermon, Gesu Church, Right Rev. Sebastian G. Messmer, Archbishop of Milwaukee.

10:00 a. m. Registration. Payment of dues.

10:45 a. m. Words of greeting from the president of Marquette University, Rev. H. C. Noonan, S. J.

11:00 a. m. Address of welcome, Dr. John R. McDill, chairman of the Wisconsin Committee for the Rating of Hospitals, Milwaukee, Wis.

11:30 a. m. President's address, Rev. Charles B. Moulinier, S. J.

12:00-2:00 p. m. Recess.

2:00 p. m. Paper—"The Nature, Necessity, and Value of Team-Work in a Hospital," Dr. C. H. Mayo, attending surgeon St. Mary's Hospital, Rochester, Minn.; professor of surgery Post-Graduate School of Medicine, University of Minnesota. Discussion—Dr. M. F. Fallon, surgeon-in-chief St. Vincent's Hospital, Worcester, Mass.; Dr. G. F. Connell, St. Mary's Hospital, Oshkosh, Wis.; Dr. W. F. Scott, Oak Park Hospital, Oak Park, Ill.

3:00 p. m. Paper—"What the Physician Should Contribute to the Team-Work," Dr. Edward A. Evans, St. Francis Hospital, La Crosse, Wis. Discussion—Dr. L. W. Littig, chairman Section on Hospitals, American Medical Association, Davenport, Iowa; Dr. L. F. Jermain, dean Marquette University School of Medicine, Milwaukee, Wis.; Sister M. Veronica, superintendent of nurses Mercy Hospital, Chicago, Ill.

4:00 p. m. Address—"The Ethical Basis of Team-Work in Hospitals," Dr. Austin O'Malley, Philadelphia, Pa.

SECOND DAY, THURSDAY, JUNE 8

9:00 a. m. Paper—"What the Sister Should Contribute to the Team-Work," Mother M. Esperance, St. Mary's Hospital, Minneapolis, Minn. Discussion—Dr. D. S. Fairchild, editor Journal of the Iowa State Medical Society, Clinton, Iowa; Dr. Edward L. Tuohy, St. Mary's Hospital, Duluth, Minn.; Dr. F. S. Wiley, St. Agnes Hospital, Fond du Lac, Wis.; Dr. Nora Crotty, Cincinnati, Ohio.

10:00 a. m. Paper—"What the Intern Should Contribute to the Team-Work," Dr. E. H. Beckman, attending surgeon St. Mary's Hospital, Rochester, Minn. Discussion—Dr. Raymond P. Sullivan, Brooklyn, N. Y.; Dr. John W. Lane, surgeon-in-chief St. Elizabeth's Hospital, Boston, Mass.; Dr. F. C. Schuldt, St. Joseph's Hospital, St. Paul, Minn.; Dr. L. M. Warfield, assistant superintendent Milwaukee County Hospital, member of faculty of Marquette University School of Medicine.

11:00 a. m. Paper—"What the Nurse Should Contribute to the Team-Work," Miss Adelaide M. Walsh, president Illinois Board of Nurse Examiners, Chicago, Ill. Discussion—Sister M. Regina, superior Mercy Hospital, Wilkes Barre, Pa.; Miss Mary C. Wheeler, superintendent Illinois Training School for Nurses, Chicago, Ill.; Dr. W. C. F. Witte, member of faculty of Marquette University School of Medicine, St. Mary's Hospital, Milwaukee, Wis.

12:00-2:00 p. m. Recess.

2:00 p. m. Paper—"What the Patient Should Contribute to the Team-Work," Dr. W. E. Fairfield, St. Mary's Hospital, Green Bay, Wis. Discussion—Dr. John R. McDill, chairman of the Wisconsin Committee for the Rating of Hospitals, Milwaukee, Wis.; Dr. John A. Hornsby, secretary of Section on Hospitals American Medical Association; editor of THE MODERN HOSPITAL, Chicago, Ill.; Dr. M. J. Cronin, associate physician-in-chief St. Elizabeth's Hospital, Boston, Mass.

3:00 p. m. Paper—"What the Chaplain Should Contribute to the Team-Work," Rev. F. W. Tracy, chaplain St. Mary's Hospital, Rochester, Minn. Discussion—Rev. Geo. A. Metzger, Brooklyn, N. Y.; Rev. J. B. Illig, Sacred Heart Sanitarium, Milwaukee, Wis.; Dr. T. L. Harrington, lecturer in hygiene and public health, Marquette University School of Medicine, Milwaukee, Wis.

THIRD DAY, FRIDAY, JUNE 9

9:00 a. m. Symposium—"The Rights of the Patient." Paper 1—"The Medical Profession's Obligation to the Patient Who Needs Hospital Care," Dr. Henry A. Christian, Hersey professor of theory and practice of physic, Harvard University School of Medicine; physician-in-chief of the Peter Bent Brigham Hospital, Boston, Mass. Discussion—Dr. Karl Doege, St. Joseph's Hospital, Marshfield, Wis.; Dr. Rock Sleyster, secretary Wisconsin State Medical Society; chief of the Hospital for the Criminal Insane, Waupun, Wis.; Dr. W. H. Washburn, associate professor of medicine Marquette University School of Medicine, Milwaukee, Wis. Paper 2—"The Hospital's Obligation to Every Patient Who Enters:" a, Through Its Selection of Staff; b, Through Its Selection of Interns; c, Through Its Selection of Nurses; d, Through Its Selection of Equipment; e, Through Its Selection of Diet; Dr. John T. Bottomley, surgeon-in-chief Carney Hospital, Boston, Mass. Discussion—Dr. Henry J. O'Brien, St. Joseph's Hospital, St. Paul, Minn.; Dr. J. M. Dodd, secretary State Board Medical Examiners, Ashland, Wis.; Dr. Curtis A. Evans, Milwaukee Hospital, Milwaukee, Wis. Paper 3—"The Staff's Obligation to Every Patient Who Enters the Hospital," Dr. B. F. McGrath, professor experimental and junior surgery, Marquette University School of Medicine, Milwaukee, Wis. Discussion—Dr. A. H. Levings, professor of surgery Marquette University School of Medicine, Milwaukee, Wis.; Dr. John M. Beffel, member of State Board of Medical Examiners; member of Wisconsin Committee for Rating of Hospitals.

12:00-2:00 p. m. Recess.

2:00 p. m. Business meeting. Reports of officers. Election of officers.

3:00 p. m. Meeting of new board of directors.

NOTE.—Papers should not be longer than twenty minutes or half an hour in the reading. Copies of papers should be sent to the secretary, Dr. Maud R. Williams, 431 Twelfth street, Milwaukee, Wis., in time to be sent to those who are to discuss them, some time before the meeting, as many of those who will discuss papers live at a considerable distance.

NOTICE FROM THE SECRETARY

The second annual meeting of the Catholic Hospital Association will be held at Milwaukee, Wis., June 7, 8, and 9, 1916, in the auditorium of the Gesu school building, Thirteenth and Sycamore streets.

All Catholic hospitals are requested to send delegates to this meeting. All doctors and nurses in good standing, and individuals interested in hospital work, are cordially invited to attend. A hospital may be represented by one, two, three, or more representatives, but the payment of the annual dues of $5 entitles the hospital to only three votes. Individuals wishing to be members—i. e., sisters connected with hospitals, or interested in hospital work, nurses, doctors, or individuals interested—may join as associate members, and the payment of the annual dues of $2 entitles each to one vote.

Masses will be said daily at the Gesu church, two blocks from the Gesu auditorium, from 5:30 to 8:30 a. m.

Last year there was some difficulty about board and lodging. All did not write as requested to make reservation, and some of those who did make arrangements found accommodations elsewhere without giving notice of the change. Board and lodging can be obtained at the rate of $1 a day for the three days of the meeting, and from $5 to $6 per week for those remaining to take the summer courses to be given at Marquette University School of Medicine.

Notice of the number of delegates to the convention should be sent to the secretary not later than May 25. Those who cannot make arrangements for board and lodging, and wish to have reservations made here, will kindly notify the secretary in writing not later than May 25.

To reach the Gesu church and Gesu auditorium: those arriving on the Northwestern line will take a Twelfth Street car in front of the depot on Wisconsin street and ride west to Eleventh street and Grand avenue. Those arriving on the Milwaukee Road or Soo line will walk two blocks north from the depot to Grand avenue, take either a Wells or Twelfth street car going west on Grand avenue and get off at Eleventh street; then walk one block west to the Gesu church and two blocks west and one block south to the Gesu Auditorium.

MAUD R. WILLIAMS, M. D., Secretary,
431 Twelfth street, Milwaukee, Wis.

## KANSAS HOSPITAL ASSOCIATION MEETS

### The President Presents Address on Changes in the Hospital Idea—A Large Attendance and New Members at the Meeting.

The Kansas Hospital Association met in Topeka on May 2. The association has been growing during the year, and the meeting was far larger than the one held last fall.

The officers elected for the ensuing year were: president, Dr. Samuel Murdock, of Sabetha; vice-presidents, Dr. J. C. Hall, Dr. W. F. Shelton, and Dr. George W. Jones of Lawrence; secretary-treasurer, Dr. W. R. Dillingham, of Halstead. The members of the executive committee are Drs. Goodsheller, Trueheart, and Axtell.

The next meeting will be at Salina, Kan., about the first of May or the day before the meeting of the State Medical Society at that place.

Sister Catherine Voth, member of the State Board of Registration and Examination of Nurses, read a very interesting paper on "The Training Schools for Nurses in Kansas," which was well discussed.

Dr. R. Claude Young, of Arkansas City, read a paper on "The Responsibility in Cases of Hot Water Bottle Burns," about which everyone present seemed to have some knowledge. Very few hospitals had not had some experience with burns.

Dr. F. W. Shelton, of Independence, read a paper on "The Small Hospital and The Training School." Most of the hospitals represented have training schools, and most of them thought they could hardly conduct their hospitals at the rate they were now charging without training schools. The necessity of the practical as well as theoretical work being combined was well brought out.

Dr. W. J. V. Deacon, of the State Board of Health, read an interesting paper on "How to Make Out Vital Statistics Reports."

The address of the president, Dr. J. T. Axtell, of Newton, was one of the best features of the meeting, and those present thought there were some very sensible things in it. The address follows:

Thirty years ago the Axtell Hospital was organized in Newton. It was ready for patients February 1, 1887. We had four rooms for patients. The staff consisted of myself and one partner. We knew enough to put the hospital facing a park, between the depots, and on the highest ground in Newton that was reached by the sewer, and we knew little else about hospitals.

The hospital idea was not popular. A hospital was a place for poor people or for those who had no homes. Even where operations were necessary, our best people preferred to have the work done in their homes. There were few trained nurses in this country, and we then depended on practical nurses and relatives of the patient for nursing.

The hospital idea, as you know, has grown until now it is known to be the best place to take care of the sick. Hospitals are not only prepared to take care of the sick in the best way, but they are accustomed to doing so and can do it with the least friction and waste of energy. Think how one sick person in a home will demoralize the whole household, and possibly a whole neighborhood, in their efforts to nurse and care for the patient, when an additional patient in a hospital will get perfect care without a ripple of excitement.

About each hospital will be grouped the best trained physicians who specialize in their different lines of work, and who, by their training and experience, are the best qualified to make a diagnosis, and carry out the treatment, whether medical or surgical. End results can be followed up from records and the best methods can be finally determined.

The meeting together of physicians in hospitals diagnosis and treatment stimulates each to further study, more accurate diagnosis, and better work. The man who works alone is more likely to get into ruts, does not have his work checked up, and lacks many of the incentives for research and study that hospital physicians have.

From a financial standpoint, hospitals are not and probably should not be any particular success. The poor we have with us always, and they are even more likely to become sick and need hospital care than are those who are better fixed in this world's goods. A physician usually prefers to take care of most of the poor people, who appreciate his services, rather than send them to the county doctor, but this he can do without much actual expense. He is principally out his time and perhaps some medicine. But a hospital that cares for a destitute person must see that he has medical and surgical care, board, clothing, light, heat, baths, medicines, and all the necessary care of trained nurses. This is no little expense, but is something we can scarcely avoid even if we wished to do so. The physician who sends all of his pay patients to a hospital expects, or at least wishes, the hospital to care for an occasional destitute case. Our own experience in prosperous Kansas is that about one person in ten sent to a hospital is unable to pay his way. In cities this proportion may be greater. Neighbors, churches, and lodges often go together and pay a patient's hospital expenses, and this is right and should be encouraged, and physicians should meet such charity half way.

The popular conception of a hospital is more or less connected with its charity features. Our earliest hospitals were generally controlled by the churches and supported by donations and contributions. It is yet a popular thing for people with few or no relatives to leave part of their substance to hospitals. These endowments and this charity feature make it impossible to put a hospital on a purely business, dividend-paying basis and compete with other hospitals. About all a hospital can expect to do is to collect enough money from its pay patients for the running expenses of the hospital and to support its charity patients. It is seldom that anything can be saved for rent or dividends, and, if it could be done, it should go to a fund for more and better buildings and equipment, for hospitals must grow, and more and more people in the future will take advantage of hospital facilities than have done in the past. In Germany it is very rare for anyone to remain sick in his own home. The spirit of economy and efficiency, of which we hear so much, takes them to a hospital for better care at less expense.

For years our statutes have provided that institutions used exclusively for charitable and benevolent purposes were not subject to taxation. No hospitals in this country come under that strict letter of the law, as all hospitals receive pay from some of their patients. The courts, by their rulings, have modified this statute and have repeatedly ruled and have established the principle of law that it is the *use* to which a property is put that determines its liability for taxation, and not the ownership of the property. If a church or charity organization owns a piece of property and rents it to mercantile or other purposes for gain, that property is subject to taxation, while, if an individual or corporation owns a piece of property which is used for a church or any charitable purpose, it is not subject to taxation. It is the use and not the ownership which determines the question. The courts have also ruled that organizations receiving pay from some of their patients, and whose surplus is used for charity and not for private gain, are charitable associations and are not subject to taxation.

In this state at present the county clerks are usually the county assessors, and, if assessments are made on property which is supposed to be used for charitable or benevolent purposes, the recourse is to the state Tax Commission. The state Tax Commission has ruled and maintains that the hospitals of Kansas, no matter how owned —whether publicly or privately—that are under the jurisdiction of the state Board of Control are not subject to taxation. These hospitals are supervised by the state Board of Control, visited by them, and make annual reports of all work done, charity and otherwise. If the work done, as shown by the report, is satisfactory to the Board of Control, the hospitals are retained and a part of the state's fund for charity is given to the hospital. It is in this way that all the hospitals of Kansas which are not taxed receive their immunity from taxation. It is the theory that the counties should not tax what the state considers charity and helps to maintain. If, however, the county commissioners in the several counties do not accept the decision of the Tax Commission, the Tax Commission, in reference to hospitals, does not assume the office of sheriff and does not attempt to enforce its order. It can rule on the question, but does not force the county commissioners to accept its ruling. If the county commissioners refuse to do so, the only recourse of the hospital is through the courts of the state. This question is liable to be tried in the courts at any time, and means much to every hospital in Kansas. When it is tried, it certainly will be to the advantage of every hospital to make itself personally interested in the question.

In looking at hospitals from these viewpoints, it would seem to me that every town of several thousand inhabitants in Kansas could organize and maintain a small hospital if all of the physicians of the town would work together in harmony for their own good and that of the community. There are always enough citizens with civic pride in a town who will give of their money toward such an organization. One or two physicians cannot support a hospital, and therefore it is necessary that all shall work together or the enterprise will fail; but if physicians see their own advantage in the matter, they will work together. The advantage of laboratory, x-ray apparatus, and other things used in common being owned together, and not by each one separately, is of immense importance.

Specializing in certain lines of work is another important item, for it is by specializing and seeing a large number of cases that certain doctors become proficient in any one line of work, and the best paying patients of a small town will go to larger towns and to physicians who specialize in their practice. In this way there is a loss to the physicians and to the small town that could be saved if hospitals were built and physicians, by specializing and seeing more cases of a certain kind, became more skillful. If all the doctors of a town should try to be surgeons, or eye specialists, or nerve specialists, or genitourinary specialists, no one would become as proficient as he could if the work were divided.

In the organization of these hospitals it is my belief that they should not be made private corporations. There should be no capital stock issued and no dividends declared. The money that is used to build these hospitals should be donations, and what the hospital may save in its freedom from taxes and the surplus, if it should be fortunate enough to have any, can go to charity and for more and better buildings and better equipment.

# FOREIGN CORRESPONDENCE

## In the Mediterranean War Area

### WORK IN CIVIL HOSPITALS

The question of the medical care of civilians in civilian hospitals during the existing emergency has given rise to some anxiety, and has been considered at several meetings of the profession. The difficulties met with were first brought up for discussion with regard to the position in Manchester. At the Royal Infirmary in this city, twenty-seven of the thirty-three members of the honorary medical staff were (at the end of September, 1915) doing military duty of some kind, and the resident staff had been reduced to eight, who had to deal with a very large number of emergency cases, being assisted in this work by the senior students. Similarly, at the Ancoats, Salford, and St. Mary's hospitals the visiting and resident staffs were much depleted. At a meeting in London to consider the general question of scarcity of resident medical officers, Dr. Verrall stated that in some of the smaller provincial towns the hospitals were unable to obtain any residents at all. Mr. Bishop Harman expressed the opinion that at no very distant time every doctor of military age would be required for military service. He suggested that the way to meet the difficulty would be for the visiting staff of civil hospitals to undertake hospital duty for a day at a time, spending the whole twenty-four hours within the hospital. This has always been the military practice, there being an "orderly officer" for the day, who is on the spot and always available for an emergency. This procedure has already been adopted at the West London Hospital. Dr. Galloway agreed that it might be necessary for the visiting staff to undertake a twenty-four-hour tour of duty in rotation. Lieutenant-Colonel Sir James Barr, consulting physician to the Liverpool Royal Infirmary, has declared emphatically that "everything should be viewed from a military point of view, and the medical care of the civil population must be placed a long way behind that of our fighting men." He considers that all the medical work of the country can be carried on by medical men over military age, and that the young men should be set free for foreign service; if this country cannot produce the men that are required, "there will be no course open but to apply to the United States to fill up the necessary complement."

In Manchester the work of the Royal Infirmary is, under ordinary circumstances, divided among three establishments—an accident and out-patient department in Roby street, an out-patient department in Parker street, and the hospital itself in Oxford street, with 836 beds. Consequent on the war requirements, 60 beds at the Roby street branch were allocated to sick and wounded soldiers (in addition to some 250 beds in the central institution), and the out-patient work had to be discontinued. Again, in October it was found necessary to close the out-patient department in Parker street, so large a proportion of the infirmary staff being engaged in war work. The second western general hospital, whose headquarters are at Manchester, has 3,000 beds distributed among twenty-two different buildings in the city; in addition, there are 7,000 more beds available in auxiliary hospitals within the area, to which patients could be drafted. It must be allowed that the position becomes a difficult one with which to deal, as regards adequate supply of medical aid, in some cases. At the Royal Infirmary the resident staff normally numbers twenty-three, and in October there were only eight. At St. Mary's Hospital, which receives more than 100 maternity cases a month, most of them difficult, and is also a gynecological hospital, there are normally seven resident medical officers, but at present there are only two. There is no need to give further instances of the scarcity of young medical men available to fill the posts of resident officers in hospitals and infirmaries throughout the country.

Very extensive provision has been made at Liverpool for military requirements. The City Hospital at Fazakerly, of the pavilion type, standing in airy grounds, accommodates 500 military patients. Highfield Hospital, an almost new building, in a healthful situation, has 500 beds; the West Derby Union Infirmary, at Mill Road, has 400 beds; and that of Toxteth Union 100 beds. All these establishments are entirely given over to the needs of the army. In addition, 200 beds are provided at the Woolton Hydropathic and at the Royal Infirmary, 600 beds at Southport, 250 at Birkenhead, etc., so that in the Liverpool district provision is now made for about 5,000 military patients.

At Belfast the exhibition buildings were adapted to hospital requirements and handed over to the military authorities some time back. A new block has been erected, continuous with the one previously occupied, so that 200 patients can now be accommodated in what is called the Ulster Volunteer Force Hospital.

The first hospital to be set apart for the accommodation of wounded officers in Scotland, known as the York Hill Officers' Hospital, was opened at Glasgow in September, in the new children's hospital at York Hill, the other half being occupied by children under twelve years of age. The building is admirably situated in spacious grounds, and is well adapted for the purpose. Many other hospitals of moderate size and private mansions in Scotland have been placed at the disposal of the military authorities as convalescent hospitals and homes for wounded soldiers, in several instances under the administration of the Red Cross Society.

At Englefield Green, near Windsor, a hospital of 120 beds, arranged in six pavilions, has been handed over to the War Department by the Red Cross Society and named the Princess Christian British Red Cross Hospital. These pavilions are built in a semicircle, facing southward, and each of them has a canvas-covered veranda, projecting about 8 feet, to which the patients can be wheeled so as to enjoy the air and magnificent view over Windsor, its castle and park. The construction is of well-seasoned pitch pine, lined internally with asbestos; the warming is by gas radiators and by slow combustion stoves, and lighting is by electricity. Except for the medical attendants and the male orderlies of the St. John ambulance brigade, the whole staff consists of ladies, including the quartermaster and the superintendent of the x-ray department.

### PREVENTION OF TYPHUS

In view of the spread of typhus through the medium of lice (two German investigators, Jochmann and von Prowozek, having fallen victims to the disease), the disinfection of hospital buildings and patients' clothing has be-

Fig. 1. A French Red Cross post behind the first line of trenches in the Champagne district.

Fig. 2. An emergency operating room in a French barn, showing a French surgeon-general attending to the wounds of an officer. Behind the lines in the Meuse district many barns and farm houses have been converted into temporary hospitals, where urgent operations are performed before the wounded men are moved to the large hospitals in the cities.

Fig. 3. A Russian hospital detachment. Most of the ambulances of the Russian army are drawn by horses and are of primitive construction, presenting a remarkable contrast with the modern autoambulances used by the troops of other countries.

Fig. 4. The interior of a pharmacy car connected with an ambulance train for the use of troops in France, constructed by the London & Northwestern Railway Company of England. The car has accommodation for all necessary medical material and appliances, and is also provided with a surgical treatment room, with operating table, etc.

Some illustrations depicting scenes in the war in Europe.

come an important matter for those in charge. A large building, such as a factory, is converted into a disinfecting station; the men are thoroughly washed with soap and water in baths, and their clothing is disinfected by steam (except leather articles, which are exposed to dry heat). The detail, as practiced by Professor Galewsky at Königsbruck, was as follows: all cracks and corners were washed with cresol soap (3-percent solution), and then filled up; the clothing was hung up loosely; sulphur was burned in stoves, 25 kilograms being used for a building having an area of 450 square meters (height not stated); the sulphur was distributed in sixteen stoves, and the burning reached its maximum in forty-five minutes. After three hours windows were opened, and two hours later the oc-

cupants (prisoners) were readmitted, having been washed during the interval. All lice and their eggs were found to have been completely destroyed, except in one parcel of shirts that had been tied up in a tight bundle. Sulphur vapor appears to be the simplest, cheapest, and most efficient disinfecting agent for vermin (and therefore against typhus).

A Retired Army Officer.

## THE FIRST MORO HOSPITAL

### Zamboanga Hospital in the Philippines Is Not Elaborate, But Does Good Service for Uncle Sam's Antipodean Children

The Zamboanga Hospital was formally opened to the public on February 2, 1914. Plans were first formulated by the Right Reverend C. H. Brent, bishop of the Philippine Islands, for the building of this institution in 1909, but owing to

Fig. 1.

Fig. 2.

Fig. 3.

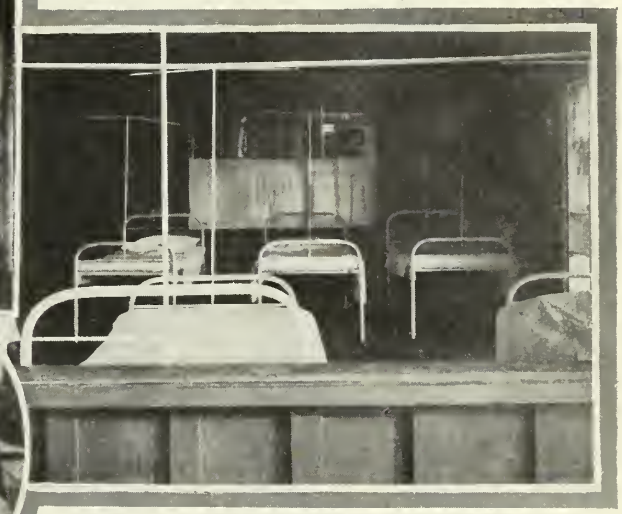


Fig. 4.

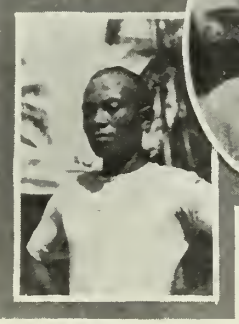


Fig. 6.

Fig. 7.

Fig. 5.

The First Moro Hospital. Fig. 1—Zamboanga Hospital grounds; the hospital is back in the forest. Fig. 2—The hospital. Fig. 3—Dr. C. H. Halliday and nursing staff. Fig. 4—One of the wards; note mosquito net frames. Fig. 5—Operating room; asepsis is quite the same in the Philippines as in New York or Chicago. Fig. 6—Mastura, a Magindanao Moro, before operation. Fig. 7—Mastura after operation.

lack of sufficient funds the hospital was not opened until the above date.

For a year previous to its formal opening, admirable work had been done in a temporary bamboo building, the medical work being done by officers of the United States Army Medical Corps, with the assistance of two native nurses.

The hospital, as first completed, represented an outlay of about $15,000. Of this sum, $6,000 was contributed by a philanthropist and patriot who desired his name withheld. Mrs. Leonard Wood collected about $1,200 for the woman's ward and the operating room, and about $3,000 was pledged and contributed locally. In order that the hospital could begin its career without debt or incumbrance, Bishop Brent personally assumed responsibility for unpaid pledges.

The hospital is a two-story frame building, the second story being devoted to 8 private rooms and operating, dressing, and sterilizing rooms, the first floor having three wards, with a total bed space of 22 beds, offices, dispensary, laboratory, and kitchen.

During the present year separate quarters for the nurses and superintendent have been built, modern plumbing installed in both sets of quarters and in the hospital, and an electric lighting system is being installed, all representing an outlay of about $12,000.

The Zamboanga Hospital was planned and erected to minister to the needs of the cosmopolitan population of Zamboanga and vicinity, with special efforts to reach the needy Moro. It was the first civil hospital to be opened in the department of Mindanao and Sulu, and that it is fulfilling its mission toward the public must be judged from the work now being done.

During the last six months the average monthly attendance at the free dispensary has been about 700, and the average monthly admissions to the hospital have been about 25. These figures seem very small, but, when it is considered that the dispensary patients are drawn from the Filipino and Moro races, to whom a hospital is almost an unknown institution—in fact, by the majority a place to be avoided—it would appear that the hospital had made rapid advancement among the people of this vicinity.

The clinic includes malaria in all forms, typhoid, pneumonia, cholera (during the recent epidemic), dengue, beriberi, liver abscess, appendicitis, cancer of the breast and uterus, skin diseases of all kinds and in all stages of advancement, diseases of the eye and ear, nose and throat, jaws, venereal diseases; many accident cases ranging from minor cuts to wounds necessitating amputation, and the general run of minor diseases.

Where the object of the hospital is primarily a missionary institution, it also realizes its obligation to the medical profession, and it is hoped that the staff will soon be relieved of financial worry, so that it may offer from its varied clinic its contribution toward medical science.

During the first six months of 1915 there were admitted to the hospital 59 Moros and 163 of other natives, or a total of 222 patients. In the dispensary 692 treatments were given in the same time. Quite a few patients were treated for which there is no record, as the Moros come at any hour day or night, and we have always felt that we should give our service to those who need it, even if there is not time to record the facts.

Our expense account may seem almost negligible to the big American Hospitals, with their many items of disbursements, but it is a very real burden to those who have to pare and squeeze to make ends meet. Here is one month's expense account:

MONTHLY EXPENSES OF ZAMBOANGA HOSPITAL

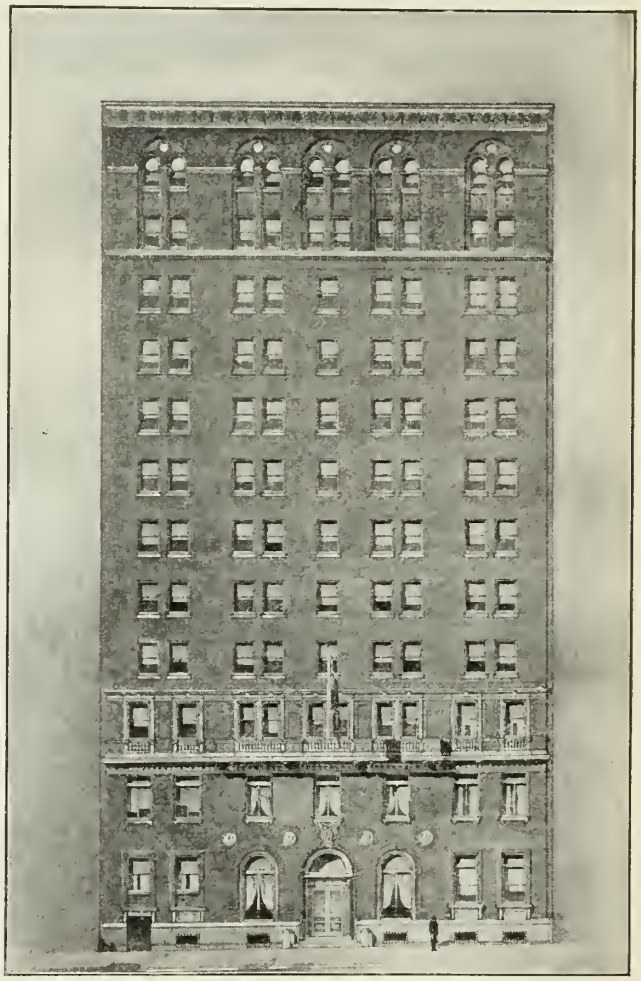
| | |
|---|---|
| Servants | ¶100.00 |
| Laundry | 45.00 |
| Telephone | 10.50 |
| Lights | 40.00 |
| Ice and water | 25.00 |
| Petty cash | 100.00 |
| Dispensary (medicine and dressings) | 50.00 |
| Total | ¶370.50 = $185.25 |

CHARLES H. HALLIDAY, M. D.,
Physician in Charge.

## NEW HOME FOR NEW YORK NURSES

### A $400,000 Building Under Auspices of the Y. W. C. A. Opened Its Doors May 1

The Central Club for Nurses of New York city opened its new $400,000 building at 132 to 138 East Forty-fifth street May 1. It is an imposing fourteen-story, fire-



Central Club for Nurses, New York City.

proof building. The facade is of Italian design, with a base course of granite, above which the walls are of red brick, with limestone and terra cotta trim, and is to take the place of the old club building at 54 East Thirty-fourth street. In the basement is the laundry, kitchen, filtration and refrigeration plants, and servants' dining room. On the first floor are club offices, safe deposit vaults, reception room, restaurant, cafeteria, and tea room, while the second floor has the library, rest room, committee rooms, offices, and an assembly and living room. From the third

to the twelfth floor, inclusive, will be 218 single rooms and 18 of larger size. The thirteenth floor will have a roof garden, storage rooms, and lockers.

The club is a branch of the Young Women's Christian Association and the first of its kind in America. It was organized in May, 1910, under the auspices of the national board, with the indorsement of the New York County Registered Nurses' Association and the superintendents of the leading training schools for nurses of New York, its purpose being to provide central headquarters for graduate nurses which offers the freedom and advantages of home life. The club will not maintain a registry, as its object is purely social. The ethical side will be taken care of by the New York County Registered Nurses' Association, which will have its registry located in the building.

The underlying thought of the women who have worked so untiringly to secure this building is expressed in the following message by Mrs. Nathaniel Bowditch Potter, chairman of the committee of management, read at the laying of the cornerstone and a copy of which is placed at the very foundation:

"To the nursing profession, each member of the community, sooner or later, owes a debt of gratitude which it can ill afford to neglect, yet which it can with difficulty repay. As a token of appreciation and faith, the public offers to the nurses of New York city this building, with the affection of many friends and in the hope that it may long stand as a center of rest and refreshment to many generations of nurses; that within its walls they may never fail to find that physical rest, mental refreshment, and spiritual renewal so necessary to those who are called to give themselves unsparingly—and, when the call comes, recklessly—to those who suffer and who die. May the club ever hold before its members that high ideal of the profession which lays emphasis on the fact that its work is not a business, but a vocation, to which, when a woman is called, she dedicates not only her abilities and skill, but her character and life, with the true self-forgetfulness of those who serve. To look back across the years and to see many noble lives heartened for their task, standing as a promise of other lives to come, will be sufficient for those of us, both within the profession and outside of it, who have labored to bring this club into being, and to hold it true to its great Christian ideal, as its steadfast purpose, an unalterable vision."

ELEANOR J. CRAWFORD, Executive Secretary.

## HOSPITAL ERECTS A NEW $250,000 PLANT

### New, Modern Group to Arise From Ashes of Old Salem (Mass.) Institution

The Salem Hospital Corporation, Salem, Mass., has recently begun the erection of a $250,000 plant for the Salem Hospital, the old quarters of which were destroyed by the conflagration that swept the city on June 25, 1914. According to the Salem *News* the new hospital will consist of a large H-shaped main building of three stories and basement, a one-story operating pavilion, a two-story and basement domestic building, and a power house.

The main building is arranged to accommodate all of the patients of the institution under one roof. Administrative offices are grouped about the main entrance.

Also in the first story are situated the surgical wards for men and women. In a like manner are provided two wards for medical cases in the second story and two isolation wards and a children's ward.

A complete maternity department and a well-equipped private ward department will occupy the third floor. Interns' quarters are designed in the attic or roof story, but will temporarily be assigned to nurses until such time as the nurses' home may be erected.

The hospital will offer accommodation to 20 private patients, occupying single rooms with closets and several with private bath and fireplaces; to 44 semi-private patients occupying small wards; to 20 male ward patients; to 20 female ward patients; to 19 maternity cases; and to 11 children; making a total of 134 beds, and in case of emergency about 25 additional beds could be accommodated without any structural changes, making a total capacity of approximately 160 beds. The basement of this building contains the out-patient and x-ray departments, the pharmacy, pathological laboratory, plaster room, patients' clothing rooms, and sterilizing room, and provision for future hydrotherapeutic and Zandar departments.

The matter of orientation has been carefully considered and the building so placed as to insure exposure to sunlight on all sides during a portion of each fair day. On the side opposite to the approach with a southerly exposure the walls of the building will form an open court, with a grass terrace, and about this court on the several stories are to be airing balconies ingeniously arranged to afford facility for outdoor treatment of patients with the minimum loss of sunlight to the adjacent rooms.

The doors throughout are arranged to be of sufficient width to permit the moving of patients in their beds.

Each ward has its separate service room, diet kitchen, convalescents' dining room, toilets, bath rooms, blanket warming closet, linen closet, medicine closet, etc., and provision even has been made for the arrangement of flowers received by patients.

In the surgical wards and in connection with the private wards rooms will be assigned for surgical dressings, and in the isolation wards there is the facility for sterilizing all dishes used by the patients.

This building is to be substantially of fireproof construction throughout, as indeed are the other buildings. The elimination of wood finish has been carried so far that the doors and windows only will remain. The fireproof floors will be covered in general with linoleum and the sanitary hospital bases are to be of granolithic; in the utility rooms the floors and bases will be of terrazzo.

Adequate egress will be provided by inclosed staircases of fireproof construction, and the building will be equipped with elevators of a size to accommodate beds or stretchers. A system of electric illumination and electric signal systems and a complete telephone system are incorporated in the design, as well as modern heating and ventilating and plumbing.

A one-story building adjoining the ward building, and with its floor at the basement level, will contain a complete operating unit, with all its various essentials, and also a separate and complete accident department, mortuary, and autopsy in the basement.

Beyond and at a still lower level the domestic building is advantageously placed, and is to be connected to the other two buildings by a service corridor at the basement level of the ward building, through which food and laundry may be easily trucked and patients from the ambulance entrance and operating department readily carried. This building will house all the men and women domestics, and contain a laundry and a central linen storage room for the hospital. The kitchen, bakery, diet class room, cold storage and dry store room, and vegetable and fruit cellar are also to be distributed in this building, and on the second floor separate dining rooms for the house officers, nurses, and men and women domestics will radiate about a central serving room.

The power plant will be connected to the domestic building by an underground tunnel for passage of pipes. In

connection with this building is to be constructed a coal pocket, located below grade and easily filled with fuel.

The exteriors of the buildings are designed to conform to the architecture of the colonial period, many fine old examples of which still exist in Salem. Eastern water-struck red brick for the walls and slate roofs are to be used.

## NOTES ON CONVALESCENCE

### Burke Foundation Issues Memoranda on Character of Cases That Do Well—Occupation in Convalescence

Dr. Frederic Brush, superintendent of the Burke Foundation, White Plains, N. Y., has recently sent out two notes on convalescence that deserve very careful consideration by the hospital people—one on cardiacs and the classes of these cases that do well, and the other on occupations for convalescents.

The first note was sent to certain sources of the Foundation's patients, mostly in New York city, and the second was sent to employees of the institution at White Plains and to many physicians, social workers, nurses, and a large list of persons interested in occupation for the sick. The notes are self-explanatory and really need no introduction:

#### NOTES ON CARDIAC CONVALESCENCE

The Burke Foundation has convalesced over 200 patients suffering from organic heart disease since May, 1915. This number does not take account of many patients with complicating myocarditis, etc., as after typhoid and pneumonia.

The average stay for cardiacs now figures about four weeks, but this is made to appear too low by the certain number that fail to do well and are sent back during the first few days, or must go home for various family or social reasons. We plan to keep each cardiac, whenever we can see continuing good results, well over four weeks.

Our results with the 50 cardiac boys convalesced at the Mount Vernon Branch have been most excellent, judged from every viewpoint. With adults it is a story of about twelve relapses, and several other instances of slight or no gain.

Large numbers of cardiacs of various kinds press us constantly for convalescence. Many of these would not, for various reasons, enter on that most satisfactory long-term training as formerly given at Sharon. We are extending this greatly needed and varied cardiac convalescence as safe ways open ahead, knowing the little help there is elsewhere at present.

Right selection of patients is of first importance. The following groupings of feasible patients for us approximately indicate the results of experience thus far:

1. Boys, 10 to 16 years, and even with fairly serious lesions and conditions.
2. Adults in whom the heart disease is not the main convalescent need, and whom we may otherwise restore. (A large and important class, and generally refused access to convalescent homes.)
3. Cardiacs who tire frequently on their jobs, without tendency to early decompensation. (Preventive, as with men from Sharonware shops, etc.)
4. A most carefully chosen small number recovering from acute attacks (and after long stay unrelapsed in hospital or home), who, for special reasons, give firm hope of not relapsing in the peculiar conditions of the standard convalescent home.

Thirty selections made by Dr. Guile through the Bellevue cardiac class have been almost wholly successful, indicating right cooperation. Do not send patients fresh from acute attacks. (Longer in hospital or in home, or in care of a cardiac class, seems best at present.) Do not send the very old, nor those in whom the pronounced neurotic or temperamental element would prevent successful and prolonged stay under partially enforced occupation—therapy, etc.

Only a limited number of cardiacs, at most, can well be placed in the general convalescent group (for well-known reasons), and suitable applicants may thus have to be declined very frequently.

Long-term follow reports to us on cardiacs convalesced here will aid in determining right convalescent methods.

#### PATIENTS' OCCUPATION AT THE BURKE FOUNDATION

First, we wish to keep constantly in mind that patients' occupation is but part of essential treatment, and not to be thought of as adding to our money or equipment. This viewpoint should be persistently impressed on the patient also. In certain cases occupation may be enforced here as a prescription. It is rapidly coming that no convalescent institution can afford to be without this organized therapeutic occupation and recreation.

Patients for occupation will be chosen generally by the superintendent and the nursing department. The nurses in the cottages are in position to aid greatly in making suggestions and selections, because they have the most intimate knowledge of the patients.

The following kinds of patients most need work cure: cardiacs, the various neurotics (including thyroid, drug users, etc.), the inherently restless, those asking or wishing it, persons who have been here or in other convalescent homes before, long-stay surgical dressing cases, and any patients that are to remain here long. In fact, our occupation will turn largely on the patients who stay longer than two or three weeks. Nurses may also help much by reporting to the directress and superintendent the results, good and bad, of our occupations.

Selections, suggestions, etc., of patients for occupation are to be referred through the directress, within whose department our occupation is placed.

The occupation manager will have actual directing of the various occupational activities. She will cooperate with the directress by reporting vacancies and opportunities in the various occupational shops and fields, and will become skillful in reporting back instances of patients not thriving in the work, etc. She will keep accounts and records of the occupation work and will report the need of supplies, equipment, etc., to the directress or to the assistant superintendent, as the directress desires.

The superintendent may, of course, direct patients at any time to various occupations (as to grounds upkeep, etc.), or send patients away from occupation. All occupation matters may be referred directly to him, or to his assistant in emergency, or in the absence of usual heads.

The Burke Foundation is being carefully observed and looked to for most important pioneering in this new health-building field (work cure for short-term convalescents), and we would ask every employee to cooperate in this right effort.

There are plans to extend our occupations from time to time (as into gardens, further salable shop products, etc.) Let it be constantly remembered and widely made known that any funds coming from the sale of occupation products will be entirely applied to the further health upbuilding of more convalescents in this vicinity.

## MINIATURE WAR HOSPITALS

### Red Cross Shows European Battlefield in Campaign for New Members—Edward A. Moose, of the Atlantic Division, Tells the Story

About all that many persons know regarding the appearance of a battlefield and the subsidiary factors, such as hospitals, camps, etc., is what they are able to gather from such terms as "sector," "terrain," "Hill No. 1," "curtain of fire," etc. It has remained for the American Red Cross to produce a battlefield, with hospitals, camps, etc., in miniature, so that even the most unmilitaristic layman can visualize, not only the tremendous movements of troops and the characteristics of modern fighting, the terrible loss of life, but also the methods of construction and location of the various hospitals erected to alleviate the suffering and terrible loss of life which are now taking place on the battlefields of Europe.

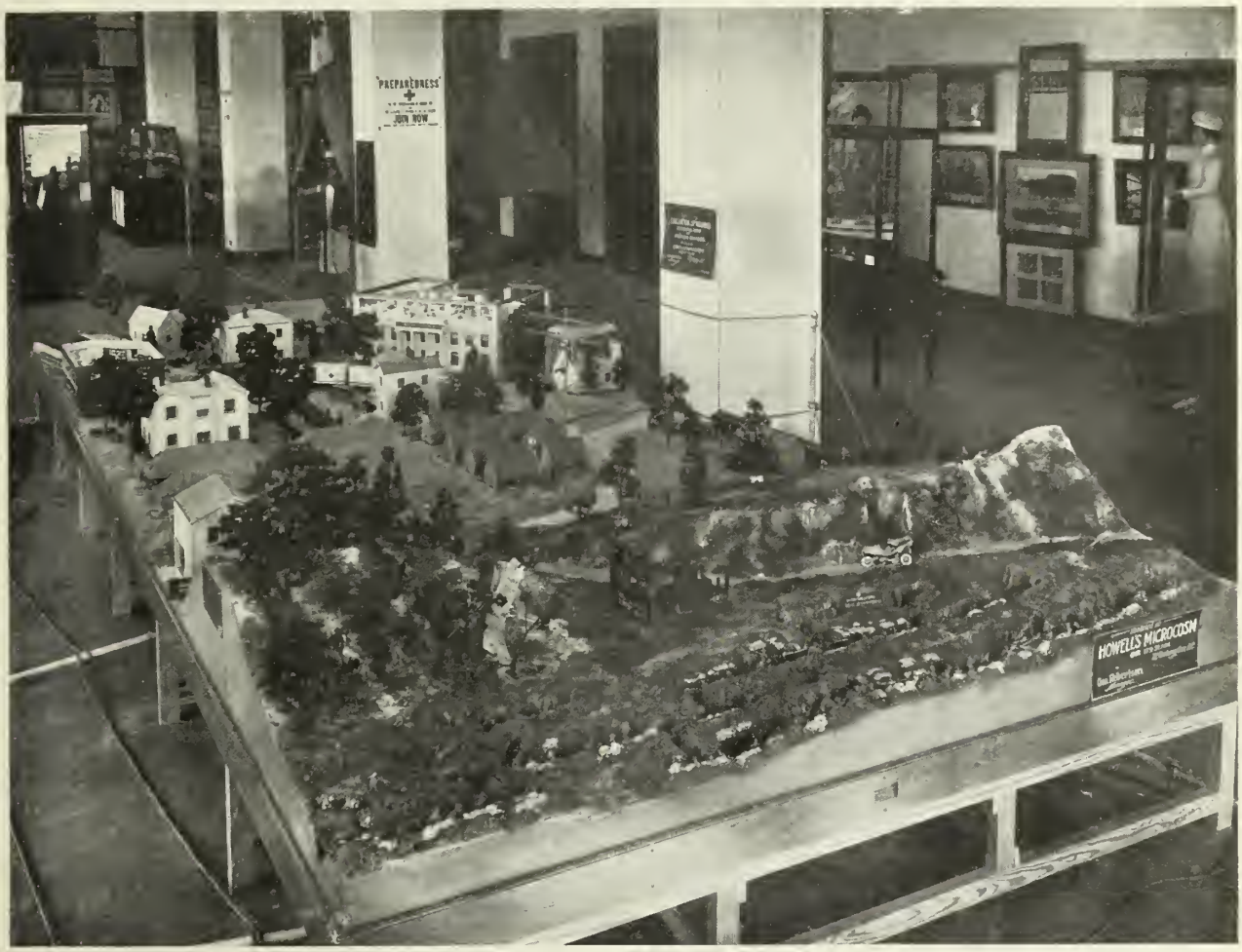
It is quite significant, when one thinks of the tremendous daily cost of war, variously estimated at from

$50,000,000 to $100,000,000 a day, that into the Red Cross model has gone thousands upon thousands of dollars, perhaps even millions, of retired and macerated currency. This miniature battlefield is only 10 by 25 feet, and was constructed by a Washington firm, being made up of old retired United States currency, which was ground up into a putty-like pulp, mixed with glue, forming a peculiar kind of papier-mache, which, when hardened, makes an extremely durable model.

This model was constructed under the direction of army officers, who declared it to be an exact reproduction in every detail of modern methods used in the relief of suffering and in the mitigation of the horrors of war through the Red Cross. It is rather curious that, while the general plan of the model was under the direction of army officers and army surgeons, some of the most important details of trench life were contributed by Mr. Ernest P. Bicknell, director of civilian relief, American Red Cross, who spent considerable time last year in Belgium and who studied trench warfare on the ground. The model is on exhibition at 411 Fifth avenue, and is one of the chief features of the campaign of the Red Cross for 100,000 members in the metropolitan district. One might call the model a "section." Whether it is one or not, one can by looking at it get an idea of a battlefield of the kind referred to in the news dispatches from the western front in France. In the background, which represents a distance of several miles in the rear of the battlefield, is an area consisting of an encampment of hospital tents, covering operating apparatus and rows of cots for the injured and quarters for the surgeons and nurses. It is to this safe spot that the wounded are transferred from the first aid station to the Red Cross in the immediate vicinity of the rear trench. It is here that no shells can reach them, and flags of the Red Cross float from a towering pole.

Then there is a third section of the model, which shows a base hospital that may be a hundred miles from the firing line. A number of buildings have been taken for use as homes for the physicians and nurses. A school house three stories in height has been turned into a hospital and a warehouse is used as a place for making surgical dressings. It is the kind of a plant the American Red Cross would set up in America if war should unfortunately gain a foothold on our shores. In the foreground are the rows of trenches, with troops lined up in them, firing at an imaginary enemy, also hidden in an imaginary trench located at about the point occupied by the spectator. There are the earth and timber roofs over parts of the trenches intended to protect their inhabitants from shells and fragments of shells. A miniature soldier stands at the telephone, communicating with the batteries of three-inch guns located behind the crest of a hill rising in the rear of the trenches. He is giving ranges. The wire is seen laid along the bottom of the trench and through the crooked trenches joining it with other lines of trenches in the rear.

The guns are delivering a "curtain of fire," dropping a series of shells on the main line between the trenches




Red Cross miniature battlefield.

of the two armies in such a way as to prevent the enemy from passing over. Unfortunately, the enemy also has been able to do damage, if one may judge from the prone figures of soldiers scattered here and there, the smashed dispatch automobile with its wounded passengers, the crumpled and shrapnel-riddled aeroplane on a hillside, and the dead horses and disabled guns further to the rear. The "curtain of fire," however, is not to be given up because of this last-mentioned misfortune. Another gun is dashing up.

This model has been constructed on a scale of half an inch to a foot, and, with the aid of a little imagination, you can picture the turmoils of battle, the agonies of the wounded, and the efficient and commendable work of the Red Cross surgeons and nurses, and their heroic service in the battlefields of Europe.

## HINTS FOR HOSPITAL SUPERINTENDENTS.

If some of these items that enter into the troubles of the junior intern about this season of the year could be presented to him in a friendly sort of way by a friendly administrator, it would probably save the young man some bad half hours and incidentally tide him over one of the most difficult places in his career. We who have traveled farther than he along the rough world paths owe a good deal to this young man, not the least of which is to try to save him from himself and to bring him to real manhood's estate and manhood's obligations and responsibilities without a stain on his brief history page for participating in a riot or conspiracy in the hospital.

A doctor connected with a Salt Lake City hospital recently conceived the unique scheme of sending in a false alarm to his hospital for an emergency operation. He laid all the wires, had a number of friends present to see the test, and then sprung the surprise. He picked up the telephone in his office, called up the hospital and informed the telephone operator that he was on his way to the hospital with a patient, that the patient had a gunshot wound, and would require an abdominal operation. Then he and his friends quietly walked over to the hospital, found that things were ready and nonchalantly complimented the institution on being able to get ready for a surgical operation so soon; it took twenty-eight minutes. This seems to us an incredibly long time to get ready for an emergency operation in a modern hospital. This Salt Lake doctor thought it was a real sprint.

How many hospitals are there in which it would take twenty-eight minutes to get ready to receive an emergency patient with a gunshot wound, and what do we mean by "ready?" And why are we not always and instantly ready? It ought to be possible to boil the instruments while the patient is being anesthetized and scrubbed, and the boiling of the instruments seems to us the only excuse for delay of any sort—for even a minute.

Before we agree to put in a new device and certainly before we order it, and before we agree to accept any material in our hospital building processes, we ought by all means to know the story—that is, the past history—of that material or device. There are some pretty live wires in the commercial side of the hospital world, and they are offering us new devices every day and new materials. About 10 percent of the time their offerings are worth while; about the other 90 percent they fall down because the inventor saw the manufacturing side only and did not know the hospital angle of the thing in which he was interested.

It is well enough to try experiments if we do so with the definite knowledge that they *are* experiments, and if we have the money to spend on them, and if they are not so interwoven with permanent and valuable things that it would be an extremely expensive thing if they were to fall short.

Those of us who have money to pay for experimental work, and who are ambitious to have the newest and best things there are, should do the experimental work with new devices and new materials. The rest of us had better find out, before accepting a thing, where it has been used, the conditions under which it was being used, and the satisfaction it was giving, not to the manufacturer, but to the hospital administrator, who, in a final analysis, is the person to pass on the justification for it.

Spring is coming on, and, while nature is getting ready to use the paint brush and the green colors on her floors, and the blues in her ceilings, and the high lights in her flowers, the hospital superintendent must think about doing a little painting on his own account. Naturally, the question comes up, what are we going to do about it? Are we going to do as we did last year and the year before and the year before that—buy cheap paints that check and crack and curl and come off with the first washing, or are we going to analyze this paint problem a little bit this year and do differently?

For an average room it takes probably a couple of gallons of paint. This paint costs all the way from $1.50 to $3 a gallon, so that the difference in price between the best and the worst would be about $3 for the room. Now, what is the other difference? Let us figure on the labor a little bit. If we put on two coats, it will take two men about two days. The average pay for a painter is about $4 a day and for his assistant $2.50, or $13 in labor for painting the room. A room while being painted is idle about five days. If we are willing to put the patient in while there is still a strong odor coming from the undried paint, we can get him back in four; but let's call it five days. The price of the average private room in the average hospital is about $20 a week, or $3 a day. That room, lying idle, costs, say, $15, so that it has cost us $28 to paint that room, and $3 for the paint makes a total of $31. About three months after this $1.50 paint is on the wall it is in such shape that we are beginning to be ashamed of it, and in six months we must renew it and spend another $31. If, in the first instance, we used the best paint we could buy, it would last easily a year, and with decent care it would last two years. A good paint would have originally cost $5 or $6, the labor would have cost $13, and the idleness of the room would have cost $15, or a total of $33. With a poor paint it would have cost $62 if we had to do it twice as often as with the good paint, and $124 if we had to do it four times as often.

All this does not figure up so large an amount of money for one room, but, if we multiply that one room by the total wall and floor space in the hospital and the total number of beds occupied by patients, for which we get money, we will find that the whole totals up a pretty considerable amount if taken off the interest on the endowment fund.

More than a thousand patients at Bellevue Hospital, New York city, recently witnessed from balconies and porches a circus performance given on the grounds of the hospital for their benefit. The circus program is an annual affair at Bellevue.

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